

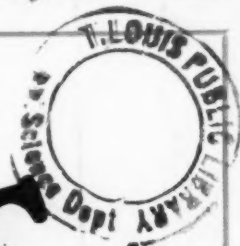
# The Electragist

TRADE MARK REG. U.S. PAT. OFFICE

Vol. 26, No. 1

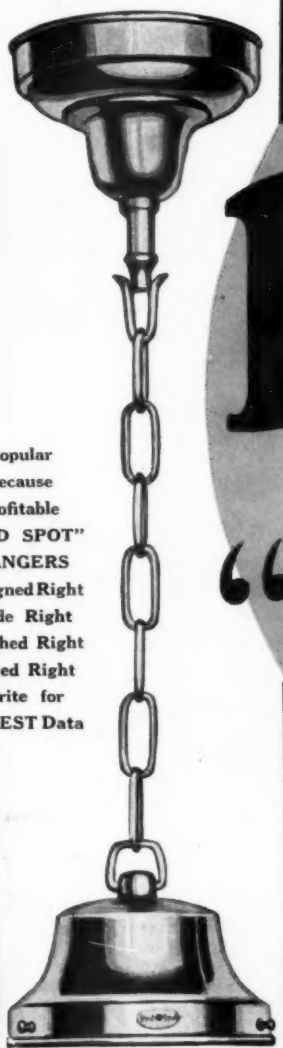
Association of Electragists  
INTERNATIONAL

NOVEMBER, 1926



the  
**BIGGEST**  
month in  
"RED SPOT"  
history

Popular  
because  
Profitable  
"RED SPOT"  
HANGERS  
Designed Right  
Made Right  
Finished Right  
Priced Right  
Write for  
LATEST Data



**M**ORE "RED SPOT" Hangers were sold in September, 1926, than in any month in the history of this Company.

We attribute "Red Spot's" ever-growing popularity to just one thing—profit to the Contractor.

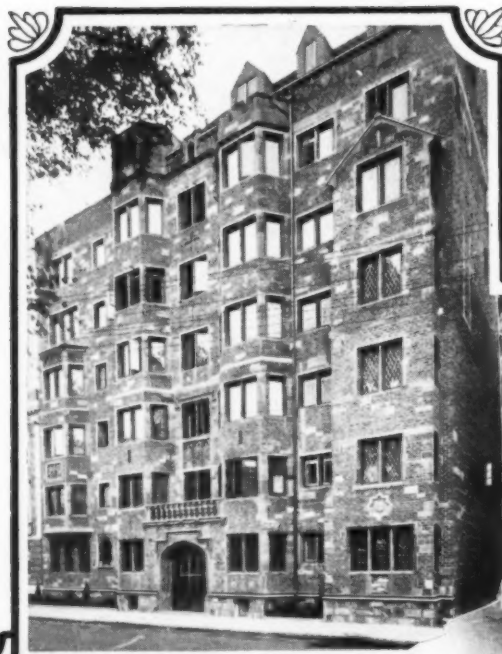
You make more money when you install "Red Spots."

Are you getting your share of commercial lighting business?

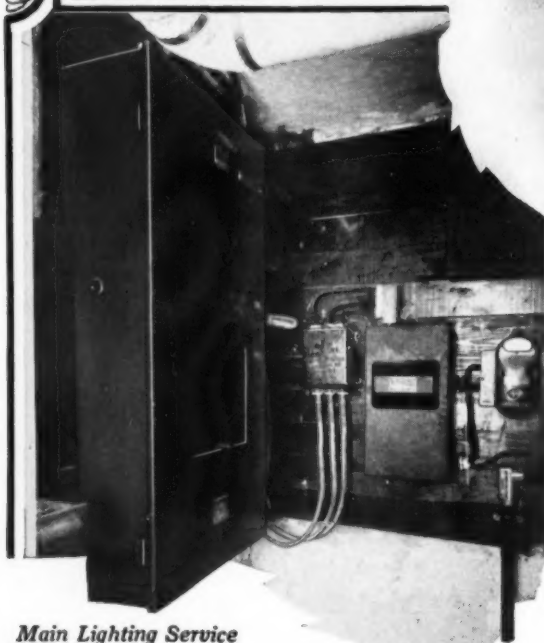
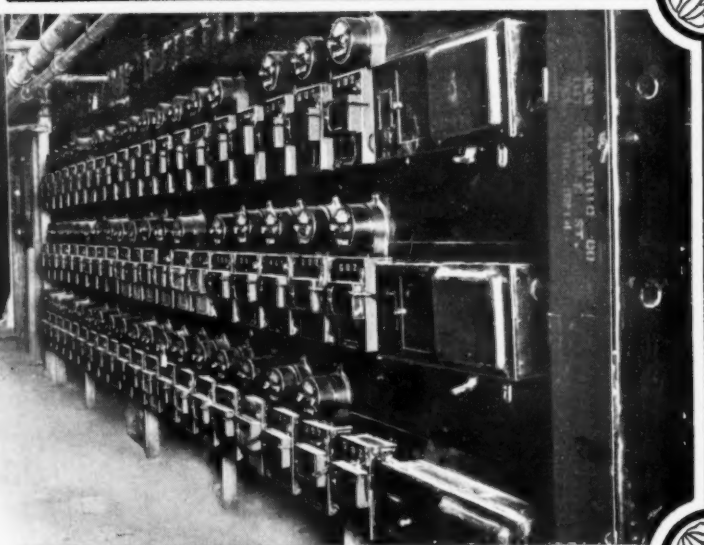
Have you a job in prospect on which you'd like a larger profit?

Write——We Help You Sell——Write

**THE F. W. WAKEFIELD BRASS COMPANY, VERMILION, OHIO, U. S. A.**



Yes, an interesting  
installation of  
**SAFETY SWITCHES**  
(Meter Service)



Main Lighting Service  
Switch and  
Power Line Switch

Cambridge Arms Apartments  
New Haven, Conn.

This installation of ∇ Safety Switches in the Cambridge Arms apartments at New Haven, Conn., is notable because all of the electrical material used was selected because of its high quality. Nothing but the best, and this is a sincere tribute to ∇ Safety Switches. All the switches in this installation are of the Class "A" accessible fuse type.

Jobbers and dealers looking for a complete line of Safety Switches for every purpose, will find in the ∇ line, just what they want, and in addition, a complete line of knife switches. A full and complete line from one source.

This installation was made by the Jem Electric Co., of New Haven, Conn. The Graybar Electric Co., of New Haven, are distributors of the ∇ line.

TRUMBULL-VANDERPOEL ELECTRIC MFG. CO.  
BANTAM, CONN.



**SAFETY  
SWITCHES**



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

ARTHUR L. ABBOTT  
Technical Director

H. H. STINSON  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Muehler, Inc.

POWER  
William J. Shore, E. E.  
Contracting Electrical Engineer

Vol. 26

NOVEMBER, 1926 — Oct. 1927 —

No. 1 — 12

## X969508 Table of Contents:

Electrical Re-inspection Is Gaining Ground .....	19
The Organization and Methods of the Underwriters' Laboratories.....	Dana Pierce 22
How One Contractor Is Selling to Industrials.....	25
Jerry's Sprained Knee .....	27
Savings Through Job Management.....	M. S. MacNaught 29
A Wiring Job That Meets a Great Bank's Needs.....	H. B. Dement and P. B. Nelson 32
Wiring Systems and Methods in the Southern Cotton Mills.....	Arthur L. Abbott 35
How Detroit Arrived at Red Seal Requirements.....	H. Shaw 39
Electragists You Should Know.....	42
Chats on the National Electrical Code.....	J. C. Forsyth 43
Red Seal Progress .....	45
Editorials .....	46
Association List .....	48
October Activities .....	50
Manufacturing .....	56

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

IRVIN SHULSINGER, Advertising Director

Copyright, 1926, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

One Year, Domestic .....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

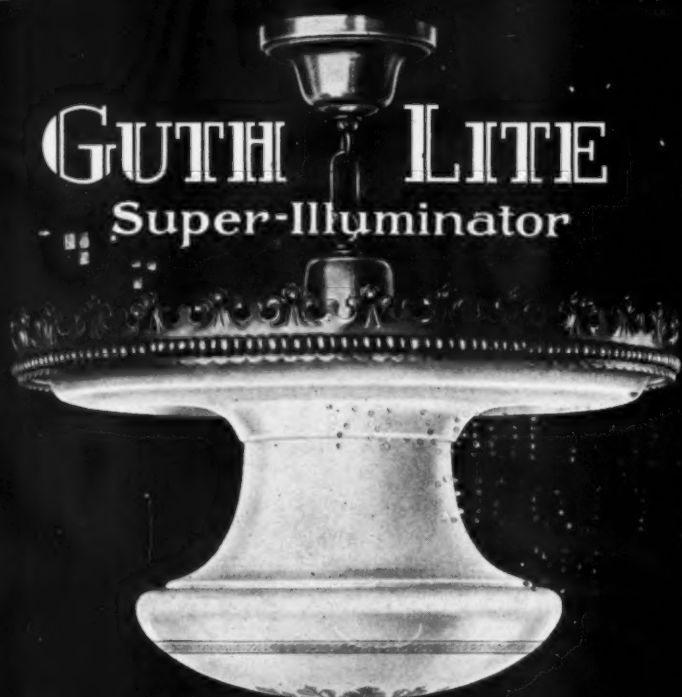
Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago

Address all Mail to Editorial and Business Office.





## GUTH LITE Super-Illuminator

### The Fastest Selling Illuminator in the Commercial Field!

GuthLite is an outstanding improvement in commercial illumination. A real money-maker.

Wonderful new features. Totally enclosed. Adjustable reflector controls the direction of light vertically and horizontally. The light is diffused and controlled!

Shadowless ceiling illumination. Wide light distribution. **More light where most needed!** Low brightness at the source. Adaptable to any kind of ceiling.

Plain and ornamental types. Packed in individual cartons, ready to install. Attractively priced. Write for literature showing the various styles.

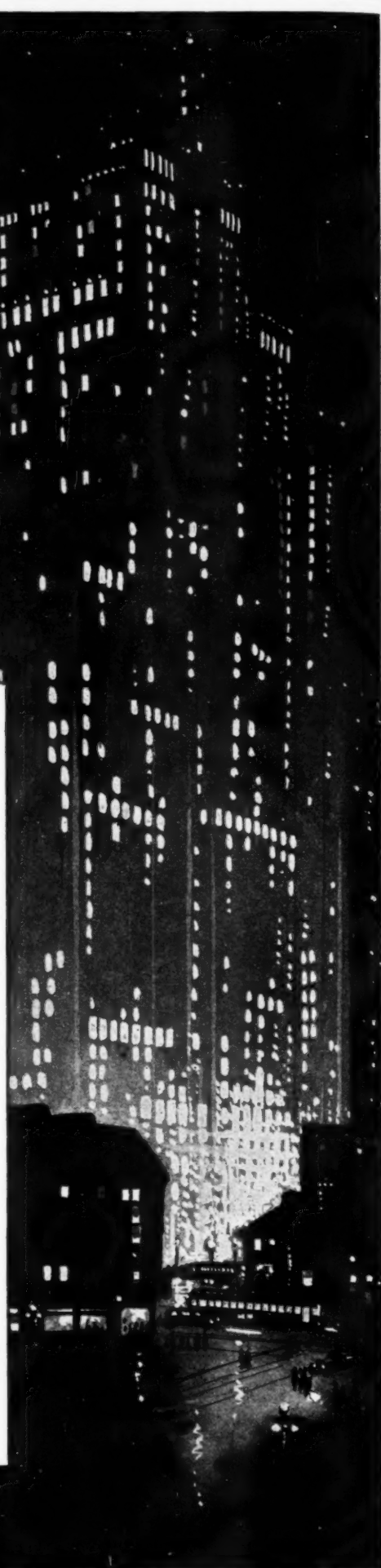
#### Prices and Sizes:

Watts	Skt.	Dia. Ref.	Glass Size	Plain Ref. Plain Glass		Plain Ref. Dec. Glass		Orn. Band Dec. Glass		Orn. Band Plain Glass	
				No.	Price	No.	Price	No.	Price	No.	Price
75 to 150	Med.	12 1/2"	8 3/4" x 4"	B2820	\$ 5.90	B2823	\$ 6.45	B2826	\$ 8.10	B2829	\$ 7.55
200	Med.	17"	11 3/4" x 5"	B2821	8.35	B2824	8.90	B2827	11.10	B2830	10.55
300 to 500	Mog.	21"	14 1/4" x 6"	B2822	11.65	B2825	12.80	B2828	15.60	B2831	14.45

**The EDWIN F. GUTH COMPANY**

DESIGNERS - ENGINEERS - MANUFACTURERS

*Lighting Equipment*  
ST. LOUIS, U.S.A.





# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

ARTHUR L. ABBOTT  
Technical Director

H. H. STINSON  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

POWER  
William J. Shore, E. E.  
Contracting Electrical Engineer

Vol. 26

DECEMBER, 1926

No. 2

## Table of Contents:

How One Contractor Handles His Inventory.....	19
Electragists Introduce Installment Sales Insurance.....	21
Labor Costs on Manhattan's Most Modern High School Building....	C. J. Ryder 22
Budgeting Has Saved Money for This Contractor.....	25
Columbia University "Lab" Has Completest Installation.....	Paul B. Nelson 27
Responsibility of an Employer for Employees Safety.....	Leo T. Parker 31
Red Seal Progress .....	33
Electragists You Should Know .....	34
Central Stations and Dealers Must Co-Operate on Merchandising.....	O. N. Robertson 35
Scope and Plan of Electragist Wiring Standards.....	37
Chats on the National Electrical Code.....	J. C. Forsyth 39
World's Largest Pull Box .....	41
Editorials .....	42
Association List .....	44
November Activities .....	46
Manufacturing .....	52

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

IRVIN SHULSINGER, Advertising Director

Copyright, 1926, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

One Year, Domestic .....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago

Address all Mail to Editorial and Business Office.

# The Picture Shows Why GuthLite *Shadowless* Illumination

Brings in Profitable  
Orders!



D. F. DAVIS  
Commercial Photographer  
1210 West 10th  
SALT LAKE CITY, UTAH  
Oct. 16, 1926.

The Edwin F. Guth Company.  
Saint Louis, Mo.  
Gentlemen:

Attention Mr. J. L. MacDonald.

We are sending under separate cover the twenty prints of the Sterling Furniture Co. store ordered in your letter of the 12th. No flashlight or other source of light was used in making these exposures. The GuthLites were burning throughout the exposure which accounts for the absence of shadows. It would have been impossible to have made flashlight or any other concentrated light reach to the back of the store.

Thanking you for the order, and trusting that the prints will be entirely satisfactory.  
I am,

Yours truly,  
D.F. Davis

Study the wonderful illumination of this store. Note the absence of shadows. No glaring reflections from polished surfaces. The photo was taken entirely by the illumination from GuthLites, spaced the average distance apart, and is unretouched.

GuthLite gives a flood of diffused, controlled light. Adjustable reflector controls the rays vertically and horizontally. Wide light distribution. Write for folder illustrating the various styles.

**The EDWIN F. GUTH COMPANY**  
DESIGNERS - ENGINEERS - MANUFACTURERS  
*Lighting Equipment*  
ST. LOUIS, U.S.A.

# GUTH LITE

Super-Illuminator

# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

ARTHUR L. ABBOTT  
Technical Director

H. H. STINSON  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

POWER  
William J. Shore, E. E.  
Contracting Electrical Engineer

Vol. 26

JANUARY, 1927

No. 3

## Table of Contents:

Watch Your Step in 1927.....	19
Installation Details in a Modern Office Building.....	Paul B. Nelson 21
Accident Prevention Methods for the Electrical Contractor....	M. S. MacNaught 25
The Truth About the Cost of Wiring.....	S. B. Williams 28
The Case for the Ceiling Fixture.....	A. L. Powell 31
Are Electrical Inspectors Being Paid Enough?.....	34
Electragists You Should Know.....	36
Why Not Consolidations of Electrical Contractors?.....	Albert A. A. Tuna 37
Chats on the National Electrical Code.....	J. C. Forsyth 39
Red Seal Progress.....	41
Editorials .....	42
Association List .....	44
December Activities .....	46
Manufacturing .....	52

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

IRVIN SHULSINGER, Advertising Director

Copyright, 1926, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

One Year, Domestic .....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago

Address all Mail to Editorial and Business Office.





## More Light Where Most Needed

GuthLite represents the first big advance in years in commercial illumination. A *super-illuminator* in which diffused light is controlled, giving more light where most needed.

Adjustable reflector controls the direction of light vertically and horizontally, also the volume of light for ceiling illumination.

Totally enclosed. Wide light distribu-

tion. Uniform intensity. Low brightness at the source. Quick, easy removal of the globe for cleaning and relamping.

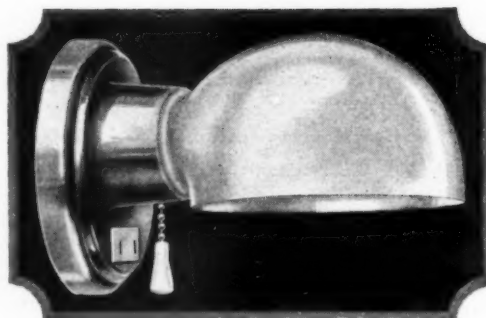
Beauty of design is here combined with remarkable efficiency. Proclaimed the greatest invention since Brascolite.

Plain and decorative types, priced surprisingly low. Write for illustrated literature.

### The New and Improved **AGLITE** Porcelain Enameled Unit

The symmetry, compactness and permanence of the new, improved Aglite have made it the most widely used illuminator of its type.

Always clean. Always like new. Three coats of *permanent* porcelain enamel fused on at 1,600 degrees. Will not discolor, rust or



tarnish. Standard colors: white or ivory.

Now made with porcelain tassel pull chain. Convenience outlet for attaching electrical appliances, if desired. Saves cost of wiring for separate wall or baseboard outlet. Write for literature and new low prices.



Brascolite

**The EDWIN E. GUTH COMPANY**

DESIGNERS - ENGINEERS - MANUFACTURERS

Lighting Equipment  
St. Louis, U.S.A.



Aglite

# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

ARTHUR L. ABBOTT  
Technical Director

H. H. STINSON  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

POWER  
William J. Shore, E. E.  
Contracting Electrical Engineer

Vol. 26

FEBRUARY, 1927

No. 4

## Table of Contents:

The Job Layout Gets Business for These Contractors.....	C. J. Geisbush	19
Analysis of Proposed N. E. Code Changes.....		21
Intangible Benefits of a Trade Association.....	Joseph A. Fowler	22
"The Same Old Story".....		23
How Burch Puts the Human Touch in Direct Mail Solicitation.....	R. Nevin	25
Organizing the Finances of a New Company.....	M. S. MacNaught	27
A New Method for Lighting Window Signs.....	J. A. Hoeveler	31
Buying Direct Costs More Than Buying Through the Jobber....	Walter A. Drury	32
Electragists You Should Know.....		34
Central Station Lamp Policy.....		35
A New System of Installing Apartment House Meters.....	Paul B. Nelson	36
Chats on the National Electrical Code.....	J. C. Forsyth	37
The Law of Reading Contracts and Specifications.....	Leo T. Parker	39
Red Seal Progress .....		41
Editorials .....		42
Association List .....		44
January Activities .....		46
Manufacturing .....		52

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

IRVIN SHULSINGER, Advertising Director.

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.


### SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.



## More Light Where Most Needed

GuthLite represents the first big advance in years in commercial illumination. A *super-illuminator* in which diffused light is controlled, giving more light where most needed.

Adjustable reflector controls the direction of light vertically and horizontally, also the volume of light for ceiling illumination.

Totally enclosed. Wide light distribu-

tion. Uniform intensity. Low brightness at the source. Quick, easy removal of the globe for cleaning and relamping.

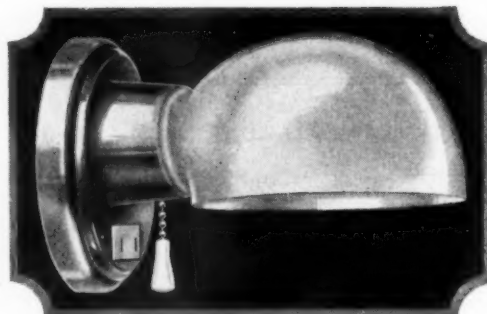
Beauty of design is here combined with remarkable efficiency. Proclaimed the greatest invention since Brascolite.

Plain and decorative types, priced surprisingly low. Write for illustrated literature.

### The New and Improved **AGLITE** Porcelain Enameled Unit

The symmetry, compactness and permanence of the new, improved Aglite have made it the most widely used illuminator of its type.

Always clean. Always like new. Three coats of *permanent* porcelain enamel fused on at 1,600 degrees. Will not discolor, rust or



tarnish. Standard colors: white or ivory.

Now made with porcelain tassel pull chain. Convenience outlet for attaching electrical appliances, if desired. Saves cost of wiring for separate wall or baseboard outlet. Write for literature and new low prices.



Brascolite

**The EDWIN E. GUTH COMPANY**

DESIGNERS - ENGINEERS - MANUFACTURERS

Lighting Equipment  
ST. LOUIS, U.S.A.



Aglite



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

C. A. REITER  
Engineering Editor

H. H. STINSON  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

MARCH, 1927

No. 5

## Table of Contents:

The Handwriting on the Wall.....	S. B. Williams	21
N. E. C. 1927 Changes to Have Field Trial Before Final Adoption.....		23
Some Problems of Office Building Installation and Their Solution		
	Walter R. Cavanna	25
School Public Address Systems a Chance for Contractor.....		30
Important Details of a Sound Financial Administration.....	M. S. MacNaught	31
Our National Electrical Code Responsibility.....	A. Penn Denton	35
How the Contractor Can Advertise for Residence and Commercial Work.....		36
Intensive Service the Keynote of New A. E. I. Fieldwork.....	R. C. Hill	37
Electragists You Should Know.....		39
Chats on the National Electrical Code.....	J. C. Forsyth	40
Red Seal Progress .....		43
Editorials .....		44
Association List .....		46
February Activities .....		48
Manufacturing .....		54

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

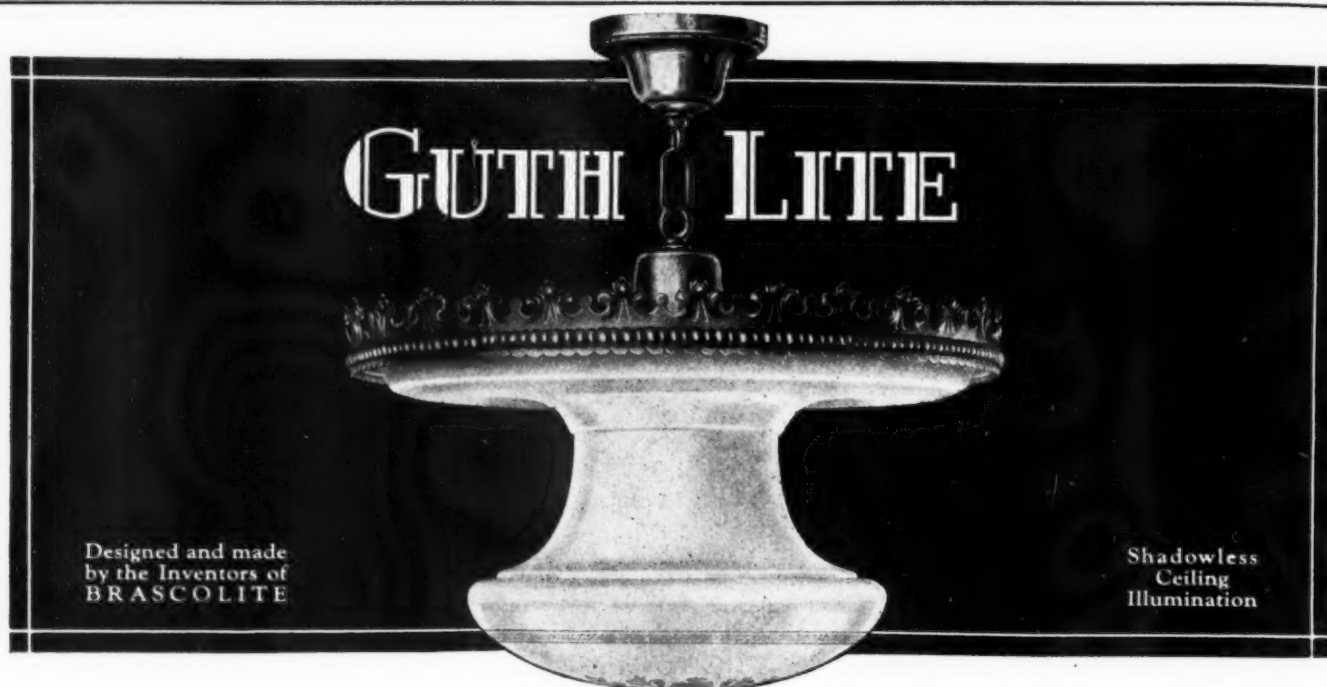
One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.



## More Light Where Most Needed

GuthLite represents the first big advance in years in commercial illumination. A *super-illuminator* in which diffused light is controlled, giving more light where most needed.

Adjustable reflector controls the direction of light vertically and horizontally, also the volume of light for ceiling illumination.

Totally enclosed. Wide light distribu-

tion. Uniform intensity. Low brightness at the source. Quick, easy removal of the globe for cleaning and relamping.

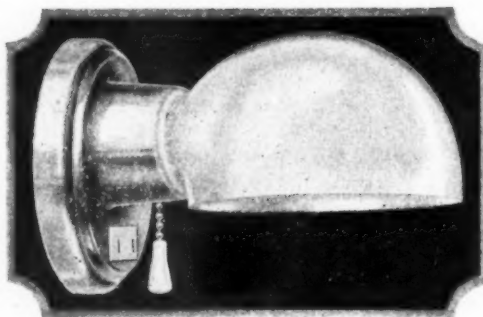
Beauty of design is here combined with remarkable efficiency. Proclaimed the greatest invention since Brascolite.

Plain and decorative types, priced surprisingly low. Write for illustrated literature.

### The New and Improved **AGLITE** Porcelain Enameled Unit

The symmetry, compactness and permanence of the new, improved Aglite have made it the most widely used illuminator of its type.

Always clean. Always like new. Three coats of *permanent* porcelain enamel fused on at 1,600 degrees. Will not discolor, rust or



tarnish. Standard colors: white or ivory.

Now made with porcelain tassel pull chain. Convenience outlet for attaching electrical appliances, if desired. Saves cost of wiring for separate wall or base-board outlet. Write for literature and new low prices.



**The EDWIN F. GUTH COMPANY**

DESIGNERS - ENGINEERS - MANUFACTURERS

*Lighting Equipment*  
ST. LOUIS, U.S.A.



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

C. A. REITER  
Engineering Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

APRIL, 1927

No. 6

## Table of Contents:

The Electragist Movement.....	Laurence W. Davis 21
Friendship, Loyalty and Tolerance.....	Clyde L. Chamblin 23
The Electrical Installation in Roxy's New Theatre.....	25
The New Motor Wiring Tables.....	30
Electragists You Should Know.....	34
The Balance Sheet.....	M. S. MacNaught 36
Canny Buying Is as Important as Good Salesmanship.....	John T. Macintyre 39
Red Seal Progress .....	43
Editorials .....	44
Association List .....	46
March Activities .....	48
Manufacturing .....	54

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.


### SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.



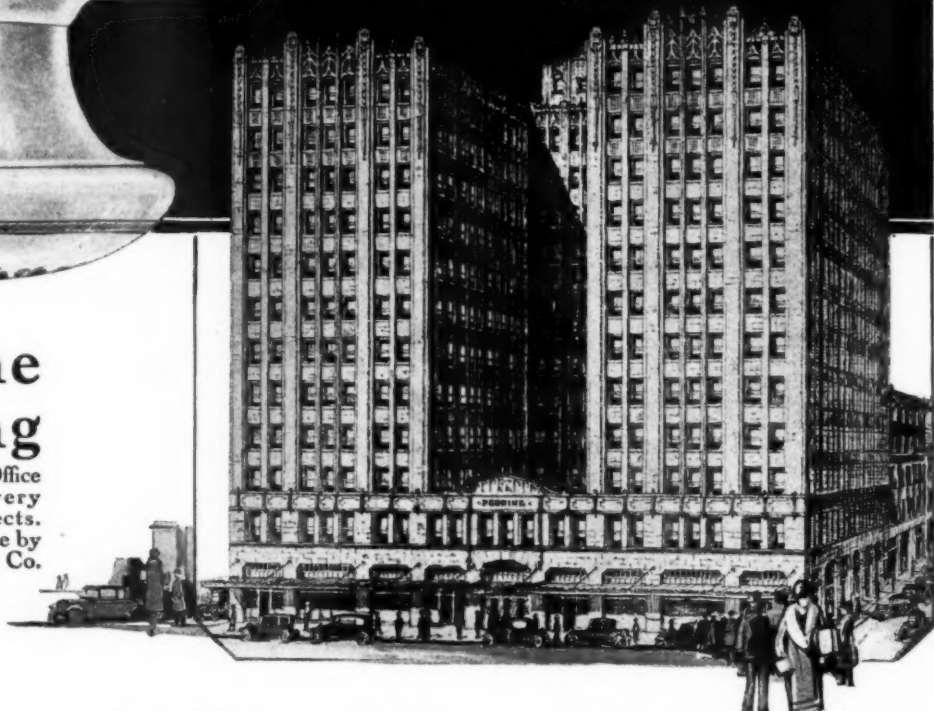


# GUTH LITE

## Shadowless Illumination

### The Perrine Building

Oklahoma's Largest and finest Office Building has GuthLite in every office. Hawk & Parr Architects. GuthLite installation made by Gaddis-Fentress Electrical Co. Oklahoma City, Okla.



## Even Faster Selling Than Brascolite

Never, since Brascolite was put on the market, have dealers had such a selling opportunity. Here is an illuminator that in less than a year has become the fastest selling unit on the market. GuthLite makes your sales opportunity because here at last is shadowless ceiling illumination as well as shadowless illumination on the working plane.

The adjustable reflector, controls the direction of light vertically and horizontally—*this means more light where most needed.* The scientific design gives extremely wide light distribution with low brightness at the source.

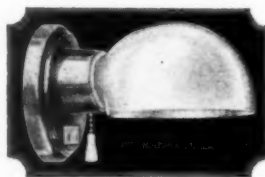
This means light that is easy on the eyes because it eliminates all shadows on the working plane.

• • Totally enclosed, yet the globe can be removed quickly and easily for cleaning and relamping. Beauty of design is combined with remarkable efficiency. Furnished in plain and decorative types.

### The New and Improved **AGLITE**

Porcelain Enameled Unit

... Always clean. Will not discolor, rust or tarnish. Standard colors, white or ivory. Write for literature.



GuthLite gives such wide light distribution that fewer are needed to light a given area. Its surprisingly low price permits its use in any commercial installation. Write now for the GuthLite exclusive selling proposition and get in on this selling opportunity.

Brascolite



**The EDWIN E. GUTH COMPANY**  
DESIGNERS - ENGINEERS - MANUFACTURERS

Lighting Equipment  
St. Louis, U.S.A.

Aglite



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

C. A. REITER  
Engineering Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. L.

Vol. 26

MAY, 1927

No. 7

## Table of Contents:

Reasons for Code Divergence Disappearing.....	21
An Interesting Large Conduit Installation.....	23
Exhibit an Important Feature of Electragist Convention.....	26
Metal Protected Wiring .....	28
How Much Protection Does Mechanics Lien Afford the Sub-Contractor	
Leo T. Parker	29
Electrical Products of 1925 .....	31
Copper and Brass Association Opens Re-wiring Campaign.....	32
That Vacation Problem .....	34
Electragists You Should Know .....	36
Proposed Florida Act Has Many Model Features.....	37
Chats on the National Electrical Code.....	F. N. M. Squires 39
New Jersey Contractor Keeps Men Busy on Re-wiring.....	41
Red Seal Progress .....	43
Editorials .....	44
Association List .....	46
April Activities .....	48
Manufacturing .....	53

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

One Year, Domestic.....\$2.00  
Foreign Subscriptions, including Canada, per year.....\$2.50  
Single Copies .....20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

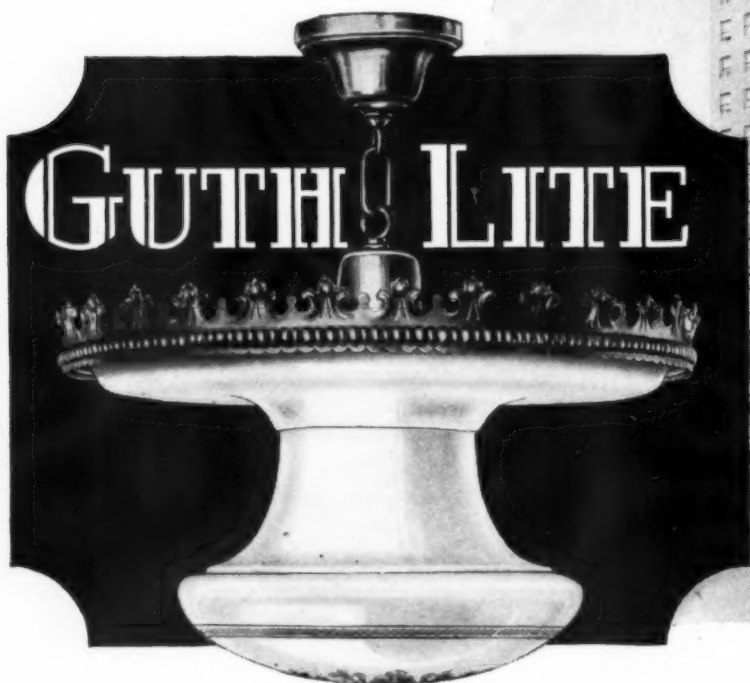
Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.

**HOTEL PERE MARQUETTE**

PEORIA, ILLINOIS.

Hewitt, Emerson and Gregg, Architects.  
GuthLite installation made by Jos. R. Downs,  
Electrical Contractor.

## —Eliminates Shadows on the working plane

HERE at last is the ideal commercial illuminator for hotels . . . schools . . . hospitals . . . stores . . . office buildings or public buildings. GuthLite is the greatest advance in commercial illumination since Brascolite was introduced by this organization more than 12 years ago.

In less than a year it has become the lighting sensation of the age. Each month sees new sales records established because Architects and Illuminating Engineers have been quick to recognize its superior features . . . found in no other illuminator on the market.

GuthLite is scientifically designed to control the direction of light vertically and horizontally,—giving an even distribution of light with no glare and low brightness at the source. It gives such wide light distribution that fewer units are needed to light a given area, which added to its surprisingly low price permits its use in any commercial installation.



Brascolite

Write for the Guth Exclusive sales  
proposition and details of Guth  
Engineering service for dealers.

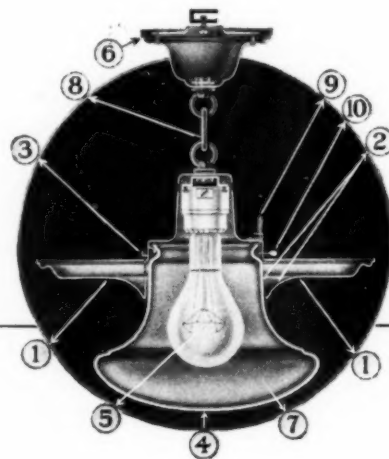
Aglite



**The EDWIN F. GUTH COMPANY**  
DESIGNERS • ENGINEERS • MANUFACTURERS  
*Lighting Equipment*  
ST. LOUIS, U.S.A.

**10 Superior Features**

- 1** Adjustable white porcelain enameled reflector controls direction of light vertically and horizontally. Uniform intensity on working plane.
- 2** Adequate, shadowless illumination of ceiling. Light reflected to the ceiling as well as to the working plane.
- 3** Ceiling light increased or diminished by raising or lowering reflector.
- 4** Low brightness at the source. No glare and no spots of high intensity.
- 5** Lamp so placed that most of the light rays are diffused through neck of globe to reflector, which directs them to working plane over wide area.
- 6** Adaptable for installation to any type electric outlet or ceiling construction.
- 7** Glass globe scientifically designed to produce efficient total output and low brightness at the visible part of the globe.
- 8** Easily and quickly installed. Open link hanger, so additional chain can be added if desired.
- 9** Patented, self-adjusting spring globe holder permits expansion of glass, preventing rattling or breaking.
- 10** Globe quickly applied or released for cleaning and re-lamping. Cleaned in a minute.





# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

JUNE, 1927

No. 8

## Table of Contents:

Wiring Conference Urges Sales Effort by Industry.....	21
Boston Edison's Cooperative Merchandising Campaign.....	23
Window Lighting Campaign in Baltimore.....	25
When and for What is the Subcontractor Liable?.....	Leo T. Parker 27
Estimating Methods.....	Arthur L. Abbott 29
Committees Preparing Plans for Electragist Convention.....	33
Electragists You Should Know .....	34
A Detailed Guide for Standard Electrical Specifications.....	35
League-Utility Cooperation Aids Contractor-Dealers .....	37
Code Chats .....	F. N. M. Squires 39
A Flexible System of Wiring for Office Buildings.....	41
Red Seal Progress .....	43
Editorials .....	44
Association List .....	46
May Activities .....	48
Manufacturing .....	54

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.


### SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.

Building of Frank G. Shattuck Co.,  
(Schraff's Stores) New York City. Russell G.  
Cory, Architects. More than 600 GuthLites  
installed by George W. Gates Co., New York City

# GUTH LITE

## Less than a year old —yet making new sales records

**I**n less than a year GuthLite has become the fastest selling unit of its type on the market. Each month it sets a new sales record.

Electrical dealers and contractors have been quick to recognize the profit making possibilities of this new illuminator.

New principles of design give lighting results never before accomplished. It eliminates all ceiling shadows and the adjustable reflector controls the direction of light vertically and horizontally. This means more light where most needed—light that is easy on the eyes because it eliminates all shadows on the working plane. Totally enclosed the globe can be quickly and easily removed for cleaning and relamping. The



design of the glass globe produces the maximum volume of light with low brightness at the source.

### 10 Superior Features

- 1 Adjustable white porcelain enameled reflector controls direction of light vertically and horizontally.
- 2 Light reflected to the ceiling as well as to the working plane.
- 3 Ceiling light increased or diminished by raising or lowering reflector.
- 4 Low brightness at the source. No glare and no spots of high intensity.
- 5 Lamp so placed that most of the light rays are diffused through neck of globe to reflector; directs them to working plane.
- 6 Adaptable for installation to any type electric outlet or ceiling construction.
- 7 Glass globe scientifically designed to produce efficient total output and low brightness at the visible part of the globe.
- 8 Easily and quickly installed. Open link hanger, so additional chain can be added if desired.
- 9 Patented, self-adjusting spring globe holder permits expansion of glass, preventing rattling or breaking.
- 10 Globe quickly applied or released. Cleaned and re-lamped in a minute.

GuthLites give such wide light distribution that fewer units are needed to light a given area. They are furnished in plain or decorative types at prices that are surprisingly low. Its beauty of design and remarkable efficiency makes it the ideal light for hotels, schools, office buildings, hospitals or any other commercial installations.

If you are among the few dealers and contractors who have not found out about the exclusive Guth selling proposition, don't wait any longer, but *write now for full details*. And be sure to ask about the Guth Engineering service for dealers.

Brascolite



**The EDWIN F. GUTH COMPANY**  
DESIGNERS - ENGINEERS - MANUFACTURERS

**Lighting Equipment**  
**St. Louis, U.S.A.**

Ag-lite



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

JULY, 1927

No. 9

## Table of Contents:

Co-operation for Service.....	Joseph A. Fowler 21
Industry Leaders to Address Convention.....	24
Teaching People the Safe Use of Electricity.....	26
Contractor Advertising Deluxe .....	28
A Friendly Industry.....	Clyde L. Chamblin 29
Successful Departmentalization of an Electragist's Business.....	31
Estimating Methods, Part Two.....	Arthur L. Abbott 35
Electragists You Should Know.....	38
Code Chats .....	F. N. M. Squires 39
Quality, the Cure for Existing Ills.....	Frank A. Pattison 41
Editorials .....	44
Association List .....	46
June Activities .....	48
Manufacturing .....	54

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

### SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.

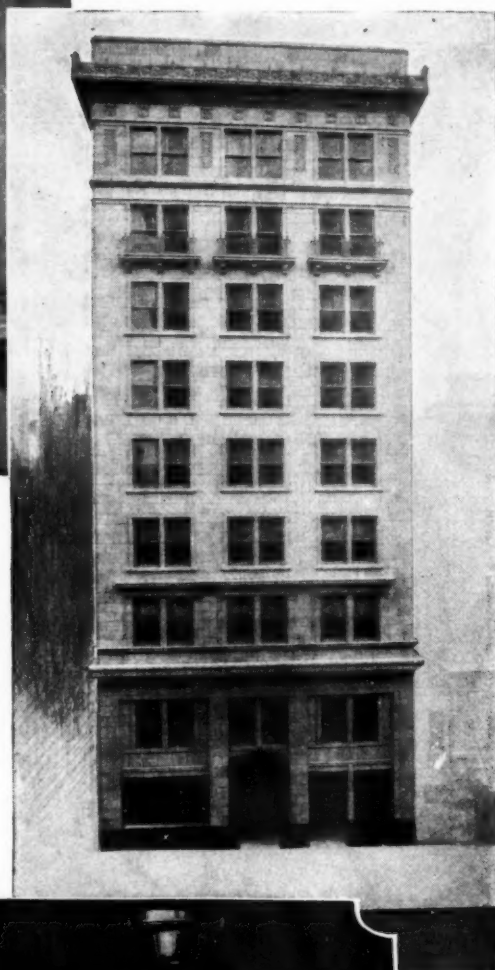


# Whether it be Special Design or Standard Guth Illuminators are Specified!



*The Tulsa Building and Loan Association, Tulsa, Oklahoma. Built and equipped by the St. Louis Bank Building and Equipment Company, St. Louis, Mo.*

*Banking room equipped with Guth Illuminators of special design and all offices equipped with the new Guth Lite shown below.*



**D**UE TO the world wide reputation won by Brascolite and GuthLite, many Architects and Illuminating Engineers look upon The Edwin F. Guth Company as manufacturers of standard lighting equipment only.

Actually a very large part of our business is designing and manufacturing special lighting units for monumental structures and other buildings requiring illuminators that will properly complete the architectural picture.

Whether it be a special design or standard equipment, Guth illuminators have been specified for the past 25 years by the leading architects and illuminating engineers, until today monumental structures in every state are lighted by Guth fixtures.

The Guth staff of designers and lighting engineers are available to you for the development of special equipment or to help adapt the most efficient standard units to your particular problem.

A Guth lighting specialist is near you and will be glad to give you any cooperation your need dictates.



**THE EDWIN F. GUTH COMPANY, 2627 Washington Ave., St. Louis, Mo.**  
*Designers, Engineers and Manufacturers of Lighting Equipment Since 1902*  
 A National Organization with Representatives in all Principal Centers

# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

AUGUST, 1927

No. 10

## Table of Contents:

The Electrical Contracting Business Situation.....	S. B. Williams	27
A. E. I. Convention to Consider Motor Sales Policies.....		29
N. E. L. A. Offers Better-Merchandising Suggestions.....		30
Pulling in a Long Feeder in a 31-Story Hotel.....		31
Regulation of Appliance Loads on Branch Circuits.....	L. W. Going	33
When Dreams Come True.....	C. P. Andrew	34
Raising the Standard of Wiring in New and Old Homes.....		35
Atlantic City Electragist Opens New Store.....		38
Estimator-Superintendent Relationship .....		39
A Father-and-Son Contracting Firm Forty-five Years Old.....		42
The Fallacy of Buying from too Many Jobbers.....	Walter P. Hoagland	44
Efficient Methods in a Motor Repair Business.....		45
"Time & Material" and "Cost Plus" Pricing and Billing Methods.....		47
Code Chats.....	F. N. M. Squires	55
Estimating Methods, Part Three.....	Arthur L. Abbott	57
Editorials .....		58
Association List .....		60
July Activities .....		62
Red Seal Notes .....		65
Manufacturing .....		67
The Electrical Spirit of St. Louis.....		71

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

## SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.

**DURADUCT**  
The fast fishing  
Single Wall Loom

**DURAFLEX**  
The real ol' able cable  
It's SAFE

**DURACORD**  
The heavy duty  
Portable Cord

**DURAX**  
The Non-Metallic  
Sheathed Cable  
of Known Quality

**DURAWIRE**  
Durabilt Quality  
for neat work

# Wiring Jobs in Record Time!

*Yer can't beat 'em!*  
*Dura Bill*

*Speed up  
with*

# DURABILT

REG. U.S. PAT. OFF.

# PRODUCTS

*Each  
a Leader in  
it's Line!*

TUBULAR WOVEN FABRIC COMPANY :: PAWTUCKET, R. I.



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buehler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

SEPTEMBER, 1927

No. 11

## Table of Contents:

Electragists' Twenty-seventh Unites Industry.....	21
Industry Interdependence.....	Clyde L. Chamblin 25
H. T. Sands Answers Fowler's Questions.....	28
The Association at Work.....	30
The Manufacturer's Viewpoint.....	D. Hayes Murphy 35
Some of Our Problems as We See Them.....	G. E. Cullinan 37
Forty-two Manufacturers Exhibit at Convention.....	40
How Portland's Code Protects the Public.....	L. W. Going 42
The Through-the-Dealer Merchandising Plan.....	H. H. Courtright 45
Code Chats.....	F. N. M. Squires 48
Editorials .....	50
Association List .....	52
August Activities .....	54
Red Seal Notes .....	56
Manufacturing .....	58

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.

## SUBSCRIPTION RATES


One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies .....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.


Address all Mail to Editorial and Business Office.



*Aristolite employs the semi-indirect principle of illumination, which assures the most satisfactory light for the home. The fixture is equipped with a convenience outlet in the center of the bottom of the fixture. This permits the use of such appliances as percolators, toasters, and other devices. Switch in base of fixture controls lights when not needed.*

Patented

## Cash in on refixturing with these unusual units



*Ease-I-Lite is a beautiful new unit, designed to produce a soft, mellow light, with complete absence of shadows. This is accomplished without sacrificing the decorative beauty that is desired in the home. A built-in convenience outlet is hidden from view, when not in use, by an ornamental pendant.*

Patented

### Shaded, semi-indirect light is the ideal light for home or commercial illumination



*The New Brascolite*  
Patents Pending

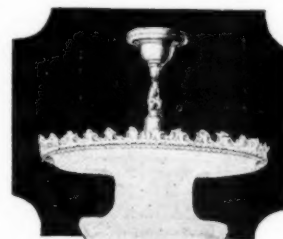
All Guth units offered for refixturing are designed to meet the specific needs of such an activity. Home Lighting units are designed to use the new standard lamps of sufficient wattage to assure adequate illumination. Lamps are shaded to eliminate glare. The fixtures have convenience outlets built in and hidden by ornamental pendants.

The New Brascolite and the GuthLite create new opportunities for commercial lighting.

All of the activities of the industry are focused on replacing obsolete and glaring lighting equipment with modern shaded light.

The reflecting surface is so constructed that the light rays are broken up and diffused over a wide area; this eliminates shadows on the working plane. Specially designed glass eliminates glare at the source.

If you are not familiar with the Guth refixturing plan write for full details. Those who have seen it pronounce it the most comprehensive campaign ever offered the industry.



*The GuthLite*

Pat'd and Pats. Pend.

*Convenience outlets built in the fixtures permit use of appliances without necessity and bother of removing a lamp from socket.*

## THE EDWIN F. GUTH COMPANY

2627 Washington Ave., St. Louis, Mo.

*Designers, Engineers and Manufacturers of Lighting Equipment Since 1902*  
A National Organization with Representatives in all Principal Centers



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## EDITORIAL ADVISORY STAFF

CODE  
A. Penn Denton, E. E.  
Member Electrical Committee N. F. P. A.

INSTALLATION  
Allan Coggeshall, E. E.  
Vice President Hatzel & Buchler, Inc.

ESTIMATING  
Arthur L. Abbott, E. E.  
Technical Director, A. E. I.

Vol. 26

OCTOBER, 1927

No. 12

## Table of Contents:

A Quantity Survey for New York.....	21
A Co-operative Market Development Plan.....	W. E. Sprackling 23
Contractor-Inspector Co-operation in Los Angeles.....	J. R. Wilson 25
Making Money on a Small Volume.....	Arthur L. Abbott 28
Mechanical Installation of Motors and Control—I.....	30
Keeping Track of Orders on the Jobber.....	32
Where Is Red Seal Heading?.....	33
Plans for Cleveland's Rewiring Campaign Completed.....	34
Stopping the Use of Sub-standard Goods.....	Alfred E. Waller 35
When Is a Contractor Liable for a Workman's Injuries?.....	Leon T. Parker 37
Estimating Methods—IV.....	Arthur L. Abbott 39
Code Chats.....	F. N. M. Squires 42
Editorials.....	44
Association List.....	46
September Activities.....	48
Red Seal Notes.....	52
Manufacturing.....	54

Published Monthly—Established in 1901

LAURENCE W. DAVIS, General Manager

Copyright, 1927, by Association of Electragists—International.

Entered as second-class matter September 1, 1919, at the Post  
Office at Utica, New York, under the act of March 3, 1879.


## SUBSCRIPTION RATES

One Year, Domestic.....	\$2.00
Foreign Subscriptions, including Canada, per year.....	\$2.50
Single Copies.....	20 cents

Publication Office: 100 Liberty St., Utica, N. Y.

Editorial and Business Office: 15 W. 37th St., New York City

Western Office: Jones & Sale, 1013 Garrick Building, Chicago.

 Address all Mail to Editorial and Business Office.



# Improved!

## PARAFFIN FINISH

# DURAWIRE

Order  
Durabilt Products  
by name  
From Your Jobber

### DURAWIRE

Rubber-Covered Wire  
and Flexible Cords

### DURAFLEX

The Safe Armored Cable  
and Flexible  
Steel Conduit

### DURACORD

The heavy-duty  
Portable Cord

### DURADUCT

The fast-fishing  
Single-Wall Loom

### DURAX

The Non-Metallic  
Sheathed Cable  
of Known Quality

Reg. U. S. Pat. Off.

A Cleaner, Smoother, and  
more Flexible wire than  
any you ever used. The  
surface won't soil your  
hands.

No sticking or jamming  
—just a quick, smooth-  
sailing wiring job that pro-  
tects your profits. DURA-  
WIRE was always good —  
now it's better than ever.

**Yes!** *it's one of the*  
**Durabilt Products**

*Speed up  
with*

# DURABILT

REG. U. S. PAT. OFF.

# PRODUCTS

*Each  
a Leader in  
its Line!*

TUBULAR WOVEN FABRIC COMPANY :: PAWTUCKET, R. I.

Shelved w. 058  
Ref. C21.3

ads out

# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

Vol. 26

NOVEMBER, 1926

No. 1

## Electrical Re-Inspection Is Gaining Ground

*A Survey of the Larger Cities of the Country Shows That the Principle of Re-Inspection Is Approved and the Practice Is Making Good Progress*

FOR two years and more this magazine has been using every means to emphasize the importance to the community and to the electrical industry of regular and thorough re-inspection of existing electrical installations. The safety of the public is a duty which the electrical industry shouldered when it entered the field of wiring for and selling current and the most direct road to public safety is the maintaining of all wiring jobs in a safe condition.

This has not always been done and even now, through indifference or inadequate funds, many cities pay no attention to re-inspection. New work is generally inspected, but work that is safe now may be a source of extreme hazard in two or three or six years.

### Making Gains

Though this inattention to the danger of old electrical installations is still widespread, THE ELECTRAGIST is gratified to report conditions being somewhat bettered. A survey of the principal cities of the country proves that nearly every inspection department of importance is in favor of re-inspection, that an encouraging number are putting it into practice and that others will do so if and when they can get the necessary funds from their city fathers.

The survey was in the form of a questionnaire sent out to 100 of the larger communities of the United States and

Canada. The questionnaire brought a 58 percent return, by far the largest percent return ever received by this magazine on any questionnaire, showing that inspectors are vitally interested in the subject.

Out of this total, forty-five cities indicated that they are making some sort of regular re-inspection of electrical installations. Thirteen replied that they were not doing so, either assigning no reason for it or saying that the appropriation of the city for the electrical department did not permit inspection of anything but new work. Of those that answered "yes," twenty-nine have a comparatively extensive system and sixteen have only recently begun. The latter fact is particularly encouraging as showing that the idea of re-inspection is making headway.

No matter with what system or lack of it re-inspections are made, some good is bound to result; but the greatest good comes when the work is done as methodically as possible. Therefore one of the most important disclosures of the survey is the variety of plans for making re-inspections.

New York City, for instance, makes regular inspections of all theatres, halls, churches, schools and other places of public assembly. This is also done in Victoria, B. C. In New York homes and apartment buildings a gen-

eral re-inspection is made whenever application is filed for inspection of additional work and also whenever re-inspection is requested by property owner or tenant. The latter is practiced also in Washington, D. C.

In Portland, Ore., re-inspection is carried on under three classifications: (a) Re-inspection in the fire district of the city; (b) re-inspection of industrial plants; (c) cooperation with the fire marshal in re-inspection of defective installations reported by fire inspectors. Portland now has three inspectors assigned especially to this work.

### Fire District

The Houston electrical inspection department makes re-inspections on the complaint of individuals, the power company and the fire department, and this is likewise the custom in Grand Rapids and in Tucson. It also makes a thorough canvass occasionally of the entire fire district looking for special conditions, such as backed fuses, etc. Charlotte, N. C., is another community making an occasional survey of the fire district.

Re-inspection and inspection of new work is combined so far as possible in Baltimore, the inspectors making a survey of old wiring whenever their time permits and in whatever district of the city they happen to be at the moment. C. H. Osborne, chief of the bureau of

buildings, Department of Public Works, notes that he has obtained very satisfactory results in this manner.

Approximately 25 percent of the residences in Atlantic City are re-inspected annually, due to unusual conditions there, many of the cottages being rented for the summer season only. When their occupants leave power is shut off and when re-connections are made in the spring the premises are inspected again as though they were new. This is a policy which would not apply in a city where the population is more permanent; however, the same conditions prevail where vacancies occur in apartment houses and this part of the plan could be followed by other communities. Norfolk, Va., is also making re-inspections whenever a change in occupancy of the premises is made.

Winnipeg inspection interests are heartily in favor of re-inspection, but state that only once has the municipality been willing to vote funds for that purpose. At that time the department engaged the services of two extra men who made a four-months survey of the business district and cleared up many defective conditions.

#### Cooperative Work

In Salt Lake City the Commissioner of Public Safety, T. T. Burton, has become interested in electrical hazards along with other dangerous building conditions and his department has made re-inspections in cooperation with the City Electrician and the local Board of Fire Underwriters. Most of these re-inspections have been confined to the business district.

The inspection department of Decatur, Ill.—and presumably the similar departments of other communities in Illinois—until recently made extensive re-inspections. Not long ago the state enabling act, from which municipal ordinances derived their legality, was declared invalid by the State Supreme Court and re-inspections have practically ceased because the departments lack power to enforce their rulings.

Re-inspections are being made in other communities, either along such lines as noted above or in somewhat haphazard fashion. Probably the best system outlined is that where places of public assembly and other structures such as office and loft buildings are re-inspected regularly and residence and apartment buildings are re-inspected whenever there is a change in tenants.

BUILDING DEPARTMENT CITY AND COUNTY OF DENVER ELECTRICAL DIVISION		DATE	
No. ....	Mr. .... Owner or Agent.	SURVEY	
		FIRE	
		REWIRE	
		FINAL INSPECTION	

Dear Sir—I have this day inspected premises at No. .... St., and find same in unsatisfactory condition, and maintained contrary to ordinances of the City and County of Denver, and a serious fire hazard. You are hereby notified to make the following corrections: .....

Defects	10 Floor	9 Floor	8 Floor	7 Floor	6 Floor	5 Floor	4 Floor	3 Floor	2 Floor	1 Floor	Basement
1. Neutral on 3-wire circuits or 1-conductor on 2-wire circuits without required polarity identification.											
2. Flexible cord, without approved metal armor, used in show windows or show cases.											
3. Lamp cord pendants too long, lamp cord used as line wire, or supported on hooks, nails, etc.											
4. Wires not properly separated or insulated from metal ceiling, piping, or other conductors											
5. Wiring exposed to mechanical injury											
6. Splices and joints in conductors not properly soldered or taped											
7. Non-safety type switches on motors, etc.											
8. Wires overloaded, or smaller than No. 14 B. & S. gauge											
9. Insulation on conductors not standard, defective, or not suitable for purpose used											
10. Wires and conduits running over roofs of buildings not properly supported											
11. Pendant or portable flexible cord not standard, defective or not suitable for purpose used											
12. No service cut-out, or cut-outs not properly located or defective											
13. No cut-out, where change is made in size of wires or cut-out not readily accessible											
14. Cabinets or cut-out boxes not properly constructed, too small, without door, defective, or not labeled											
15. Main or branch circuits over-fused or defective											
16. Non-standard or defective heating appliances motors, generators or switch board											
17. No service switch											
18. Service switches not properly installed or not suitable for purpose used or missing											
19. Non-standard or defective switches or snap switches without sub-base											
20. Panel or switchboard non-standard or improperly installed											
21. No lug connections on switches or cut-outs, of over 30-ampere capacity, or connections loose											
22. Fixtures not properly insulated or permanently grounded or supported											
23. Metal sockets used in damp or wet places or come in contact with plumbing, etc.											
24. No vapor-proof globes, or key sockets used, where exposed to inflammable materials or gases											
25. Electric signs not of approved construction or improperly installed											
26. Non-standard or defective lamp sockets or receptacles											
27. Flush switches or receptacles not enclosed in approved steel boxes											
28. No wire guards on lamps, gas-filled lamps exposing inflammable material											
29. Wiring in theatre, moving picture show or auto garage not in conduit or metal moulding											
30. Cut-outs or knife switches, not enclosed in fire-proof cabinets											
31. Non-standard moulding used, or not properly installed											
32. Moulding used in concealed or damp places, or without proper fittings											
33. Metal conduit without approved outlet boxes or with boxes not properly located or installed											
34. Metal conduit or fittings not standard											
35. Metal conduit or metal moulding not properly bonded or grounded											
36. Metal conduit not provided with bushing and locknuts, or not properly installed											
37. More wires than permitted in one conduit, or conduit sizes not in accordance with table on											
38. Rheostats or motor starting devices not properly installed or constructed, covered or protected											
39. Transformers not properly installed, motors not properly installed or grounded											
40. Neutral conductor on low-potential circuits not grounded (where required) or improperly grounded											
41. Electric pressing irons or heating devices not properly installed or protected											
42. Motion picture booth not standard, machine not approved, or without shutter or magazines											
Radio											

(Signed) \_\_\_\_\_ Deputy Inspector

REMARKS \_\_\_\_\_ City Electrician

(Approved) \_\_\_\_\_

THIS NOTICE MUST BE RETURNED WITH PERMIT FOR APPROVAL

This is a special re-inspection form used by electrical inspection department of Denver

Continuing, the questionnaire asked these questions:

- What number of re-inspections were made during the last twelve-month period you have data on?
- How many violations were found in the last twelve-month period you have data on?
- What is the total number of wired premises in your city?

- How many inspectors have you available for re-inspection work?

Not all the answers were comprehensive enough to base figures and calculations upon, but from the list have been selected ten cities which submitted the most complete data on these four questions. They are: New York, Baltimore, Grand Rapids, Decatur, Buf-



falo, Lansing, Detroit, Dallas, Pensacola, Orlando and Minneapolis.

Assuming, to provide a start, that the salary of an inspector should be \$3,000 a year we begin to arrive at some interesting figures. Striking a total for the ten cities we find that 113 inspectors made, in twelve months, a total of 81,379 re-inspections, an average of 720 apiece a year.

If their entire time had been given to this act the cost would have been \$4.20 per inspection. Inasmuch as, actually, only a part of their time was given, the cost per inspection may reasonably be cut in half or to \$2.10 per inspection.

For the same cities the total number of violations was 5,667, which is 6.93 percent of the total number of inspections. If this same percentage held true for the total number of wired premises it would mean that in New York alone there exist 30,500 hazardous electrical installations.

#### Cost

Supposing further that the cost of all re-inspection is prorated against only those installations which are found defective, that gives a cost per correction of approximately \$60. If this is so, the next question is, where is the practical financial gain from re-inspection. Figures obtained by the Chicago Department of Gas and Electricity give the average cost per electrical fire in that city for 1925 as \$134.18. Each hazardous condition corrected, then, was a potential source of a \$135 loss to the community and if it could protect itself against that by an expenditure of \$60, that expenditure might be considered insurance.

Nothing need be said here about the connection between re-inspection and the preservation of human life since it is clear that the saving of one life is worth all the resources of every city.

The estimates mentioned above have disregarded altogether the cumulative effect of regular and systematic re-inspection. In the opinion of the writer this should not be forgotten. The greatest value of re-inspection in the savings of lives and property will be in its education of the public to the realization that there are a number of things you cannot safely do with electric wiring, prominent among them the backing of fuses, the overfusing of circuits and the overloading of circuits. It is a common experience with inspectors to

discover that the laymen who do these things are mightily surprised when told they might almost as well store dynamite behind the furnace during the winter. When these dangers are pointed out to a reasonable person—most people are reasonable—they will not incur them again. Thus year by year re-inspection will build up a bulwark of public safety and at length eliminate by persuasion and teaching many of the evils that now render re-inspection necessary.

The cost to the owner of the premises of correcting the violations that occur oftenest would not be particularly large, since by far the greater percentage of violations, as reported by all the cities answering, is comprised of:

- (1) Amateur additions to existing installations
- (2) Unapproved fittings
- (3) Overfusing
- (4) Bridged or backed fuses
- (5) Improper use of lamp cord
- (6) Worn and defective lamp cord

Any of these can be simply and immediately corrected, with the greatest possible expense being the cost of one or two new branch circuits installed by a competent contractor. As for the public being willing to correct them, listen to this testimony from T. T. Burton, Commissioner of Public Safety, Salt Lake City:

#### Attitude of Public

"I have found something like three hundred locations where in nine'y-eight percent of the cases the owners or lessees have made changes as per our recommendation. We have been considerate in our recommendations so as not to change the wiring of old buildings to conform to the standards of today. Where those places have been considered to be extremely hazardous we have felt that we had the authority and the power under our ordinances to prevent fires, but we have been reasonable, and the parties concerned have seen the situation as we did and have been cooperating with us."

Thus, the survey shows, the commonest hazards are not only easily detected in the process of re-inspection, but are just as easily remedied.

Another question asked was, if re-inspection work has had any definite good effect on fire losses. Evidently few cities have compiled any figures on this, though it would seem that some reliable statistics on this point might be the lever to pry sufficient inspection ap-

propriations from hitherto complacent City Councils.

However, valuable data is obtained from the experience of Portland, Ore., where the number of electrical fires in 1925 was 75 percent less than those for 1921, due, it is thought by the authorities there, to effective re-inspection of wiring and to an ordinance preventing the sale or display of unapproved appliances.

While no other figures have been obtained through the questionnaire, without exception the replies state the belief that re-inspection undoubtedly has brought about a considerable reduction in the hazards from defective wiring.

The ultimate goal of re-inspection must be, not punishment for violators of safety rules, but education of the public so that there will be no violators. Meanwhile, until this is accomplished, inspection departments must have some means of enforcing their rulings on those who are negligent or defiant.

#### Penalties

Here, epitomized, are a number of the most common penalties provided by various municipal ordinances for failure to correct violations:

- (a) Fines ranging from \$5 to \$500.
- (b) Fines ranging from \$5 to \$500 or from 1 day to 6 months in jail or both.
- (c) Fines of from \$10 to \$25 for failure to correct within a period ranging from forty-eight hours to ten days and \$25 a day for each day after the ending of that period.
- (d) Removal of hazard at owner's expense.
- (e) Discontinuance of service. (This is the most common penalty.)
- (f) Fine of from \$25 to \$100 on each violation.

The penalty prescribed by Portland, Ore., for failure to correct violations is worthy of especial mention. Not only does it provide one of the stiffest penalties—a fine that may run to \$500, together with a jail sentence of six months; but also should a fire occur from any defects brought to the attention of a building owner, such owner is liable to the city for the cost of extinguishing the blaze and for any damage occasioned to the property owned by others.

Were such a clause as the latter incorporated in all electrical ordinances it might well have the effect of promoting the cause of re-inspection more than any other single factor.

# The Organization and Methods of the Underwriters' Laboratories

*An Explanation of How the Laboratories Came Into Existence, the Need They Are Meeting and How They Test the Qualities of Electrical Devices*

By DANA PIERCE,  
President, Underwriters' Laboratories, Inc.

SOME thirty or more years ago it began to be apparent that there was a real need for reliable information about devices and materials which affected the judgment by insurance companies of buildings in which they were used. William H. Merrill, then an inspector of the Chicago Board of Fire Underwriters, undertook to supply this need by starting a small testing laboratory in connection with his regular work as inspector.

The utility of the work soon became apparent first to insurance organizations in Chicago, then to an increasing number of manufacturers and a little later to the National Board of Fire Underwriters. The first work done was on electrical devices such as wire conduits, fuses and sockets followed by investigations of acetylene apparatus. As the idea of a testing laboratory grew, and the useful results were more widely known the work extended year by year into new fields and gasoline devices, extinguishers, fire doors and windows, automatic sprinklers, hose and many other products were submitted.

The development of the institution was from a local undertaking in a small field directed by a committee to an organization associating with itself the assistance and advice of many experts in both the insurance world and in the industries and receiving more and more recognition as the necessity and the value of its work became better understood.

From the beginning, as now, sound opinion based on facts derived from tests was the sole object sought. The claims of competing manufacturers and the often widely varying judgments of inspectors of insurance companies and others had tended to produce confusion and uncertainty. Facts proved by tests by an unbiased agency were the only



The Testing Laboratories at the New York Office

basis for reliable uniformity in practice and safe and reasonable development.

The necessary limits of this article do not permit a description of all of

the earlier stages of the growth of the laboratories. Under several names the enterprise was extended and its quarters were enlarged from a little testing room to a two-story building and in 1905 to the first part of its now extensive plant on East Ohio Street in Chicago.

During this process of growth the National Board of Fire Underwriters gave constantly increasing support both in money and recognition and in 1901 Underwriters' Laboratories was incorporated under the laws of Illinois, the ownership being vested in the National Board through trustees. There is the usual organization consisting of officers and a board of directors, the latter being chosen from executives and officers of the National Board and its member companies. Underwriters' Laboratories of Canada was formed in 1920 for the purpose of carrying forward the work in Canada, a charter being granted by the Dominion Government.

The relation of the institution to



A Fuse-Testing Experiment



others and the spirit which controls its service to the public were well stated by the founder and former president, W. H. Merrill, in 1923 shortly before his death.

"Underwriters' Laboratories has grown into remarkably wide and diverse relationships. Its connections run to many industries and to thousands of plants as well as to many underwriting and technical organizations. It has been interesting to note the fundamental basis of common interest that exists among all these as regards our investigations and to realize that their interests and our interests are firmly bound up with the still larger interests of the general public. In the last analysis it is the general public which is served by every activity of the organization."

#### Technical Work

The technical work of the laboratories is conducted by departments which are now as follows: Protection, Hydraulic, Electrical, Gases and Oils, Chemical, Casualty and Burglary Protection. The names indicate the general division of the engineering staff in the assignment of work, but two or more departments cooperate where problems to be dealt with overlap and require experts in several fields.

In addition to these is the Label Service Department, closely related to all the others, but primarily concerned with the direction and conduct of all the factory inspection of listed devices and the issuance and use of Laboratories' labels.

It is impossible to describe here the model building in Chicago with its great equipment of apparatus for testing in all departments. Only a visit to the plant can give a proper idea of the variety of work undertaken and of the extensive and for the most part unique equipment which has been developed.

At 109 Leonard Street, New York, there is a very well equipped electrical laboratory begun in 1912 and at which now considerably more than half of the electrical testing is done. A smaller laboratory for electrical work is maintained in San Francisco (office at 1014 Merchants Exchange Building) for the convenience of manufacturers on the Pacific coast.

The readers of this are chiefly interested in electrical matters and, therefore, the rest of this article will deal with the methods of the Laboratories in

this field only. It should be noted, however, that the Laboratories activities extend over a very wide range of other classes of problems and devices as well, many of which are of quite as vital interest to the underwriter, to the producer and to the property owner.

The testing and judging of an electrical device must be based upon a set of rules or principles describing both the desired properties or performance and the hazardous or at least the undesirable features. In a word, there must be a standard. For the Laboratories' purpose, a standard is limited to items affecting safety and good practice as regards fire hazards and accident hazards. Questions of cost, efficiency in operation, appearance and general utility are not involved unless in some way these may possibly affect safety in some degree.

An electrical appliance may be a hazard in one or more of the following ways: (a) It may get too hot; (b) it may produce harmful flashes or arcs; (c) it may give a shock to a person. These are the physical hazards, so to speak, and upon them are based all the electrical test work of the Laboratories and the standards guiding it. Of course, in the case of a fuse, a conduit and many other protective devices the chief concern is with the degree of protection afforded rather than to the hazard created.

#### Design

But a useful standard must deal with at least three other things also, durability, methods of installation and use, and, last but not least, those items of design and construction which experience in manufacturing and in use indicates are good practice and, therefore contributory to durability, proper installation and maintenance and even though their absolute necessity from the viewpoint of safety cannot be exactly determined by tests in a laboratory or by theory.

All of the electrical standards of Underwriters' Laboratories are the outgrowth of experience. Therefore, as this experience becomes greater both on the part of the manufacturers, inspection authorities and the laboratories, standards are revised to keep them up to date.

The usual history of a laboratory standard is as follows: One or two manufacturers submit a device of a new type or class, sometimes of their

own motive or at the suggestion of an inspector. A study of the device in all its aspects is made by the Laboratories' engineers and tests appropriate to the device are made. The claims of the manufacturer are discussed with him.

When the results are found to be generally consistent with the object sought by the Laboratories the device is listed or "approved." As other makers of similar devices come in with their products new claims may be made and new problems of design, material and testing arise. A meeting of all manufacturers, who have devices of the new kind before the Laboratories, is called at which a tentative standard is worked up and after full discussion is adopted. This may be soon advanced to the status of a regular standard.

#### Conference Committee

An Industry Conference is often appointed consisting of representatives of the manufacturers and of the Laboratories. This is in reality a conference committee which can hold meetings and work out details for consideration by both parties. It is usually a continuing body, but has no binding authority. A standard, tentative or otherwise, is submitted by the Laboratories to its Electrical Council for final approval, and the same course is followed in subsequent revisions.

It will be seen from this brief description that different standards may be in all stages of development. Not all the classes of devices listed by the Laboratories have gone through the entire standard process just outlined while others have been made, tested and listed under standards long well established and generally recognized.

The Electrical Council above mentioned is a consulting and advisory committee composed of men connected with insurance, federal, state and municipal organizations.

The present membership of about forty-five includes men of experience as engineers and inspectors from about twenty-seven cities scattered all over the United States. There are two representatives from Canada, one from an insurance board and one a municipal inspector. To this council the reports of the Electrical Department with recommendations for listing are submitted and final action by the Laboratories is dependent upon favorable action by the council. If the results of examinations and tests are such that a product



cannot be recommended for listing a detailed report is made to the submitter only.

In submitting a device the manufacturer pays a preliminary fee varying with the class of the device. At the conclusion of the work undertaken a bill is sent covering the balance of the costs, the amount being in proportion to the nature and extent of the examinations and tests required as shown by carefully kept records. The costs of the work are practically the same for a given class of appliance whether the samples show superior or inferior qualities.

After an appliance is "listed as standard" the Laboratories follows up the subsequent output in one of two ways. Under the "Reexamination Service" the manufacturer pays an annual flat fee, usually from five to thirty dollars, and the Laboratories makes re-examinations and tests of samples obtained either in the markets or in the factory. Sub-standard features so found are corrected by the maker as a condition of continued listing. This sort of supervision is found sufficient for many classes of simpler devices and for most of the more or less special appliances. It is obviously less thorough and continuous than the factory inspection and label service.

#### Wiring Devices

This latter is employed in most of the more generally used classes of wiring devices which are used in wiring installations of every sort, such as wire, conduit, armored cable, cabinets, fuses, flexible tubing and the like. Each manufacturer's device is fully described in a special "Procedure" unless, as in some cases, all the different products are sufficiently well described by the general standard. The inspector of the Laboratories visits the factory and there examines and tests samples from current production. Reports are rendered to the head office on each such inspection, summarizing the results and noting variations from the requirements if any are found. The manufacturer is at once notified of defects found and arrangements are made for the immediate correction of them. In many cases check tests are made on samples purchased in the open market or sent in by Inspection Departments. The manufacturer is required to make constant tests of his own. Supervising inspectors constantly go from place to place

checking the work of the local inspector and conferring with the manufacturer on all methods and results.

The "Label" is the evidence of this continuous supervision at the factory and of the compliance of the article bearing it with the standard under which it was originally listed.

#### Value of Work

A few days' intimate observation of the work of Laboratories' inspectors and of the reports which they send in would be sufficient to demonstrate to anyone the value of this work. Defects of all degrees of importance, variations in materials, the effects of worn tools and carelessness in assembly are discovered and corrected by the cooperative efforts of inspectors and manufacturers. This work going on quietly and persistently week in and week out produces results not always well appreciated by the buyer who nevertheless profits by them. No such varied and technical work involving relations with all sorts of concerns large and small responsible or otherwise can possibly produce 100 percent perfect results all of the time, but no pains are spared to improve the service in every way that experience and changing conditions suggest.

The Label Service has been in operation now for over twenty years and has grown steadily in volume, number of industries and manufacturers employing it and in public recognition and appreciation.

Labels are of course purchased by the manufacturer at a fixed price whether he buys many or but few. Readjustments of label prices are made from time to time.

The label is not a fee for listing or a tax. Its cost is for a service rendered and a manifest of compliance with the standard as determined in factory inspection by qualified men, well supervised and working under carefully specified procedures and rules.

#### Cooperation

It is the aim of the Laboratories to cooperate with the several industries in the electrical field and with the individual manufacturers for the maintenance of reasonable, proven minimum standards. Success is greatest where the cooperation is most complete. Police methods in the more drastic sense of the term are sometimes necessary, but are not the main purpose or reliance of the Label Service.

The relation of Underwriters' Laboratories to the National Electrical Code is often wholly misunderstood. The Laboratories does not make the Code; that is the task of the Electrical Committee of the National Fire Protection Association. The Code is adopted by the National Board of Fire Underwriters as its requirements for *electrical installations* and is printed and distributed by it. On the other hand, the Electrical Committee does not set standards for the design, construction and test of electrical materials and devices. That is essentially the Laboratories' field.

Probably some of the difficulty in keeping this distinction clearly in mind has arisen from the fact that in former years the Code did contain many requirements for construction and test. Some of these are still there as for instance on knife switches and on fuses. These are kept, however, not so much as construction rules as for purposes of identification and classification of devices. Were the Code to include all the details of construction and test contained today in the Laboratories' standards it would be a book of many hundreds of pages. Furthermore, few of the specifications and practically none of the tests can be applied or utilized by the electrical inspector, the contractor or the buyer. Endless confusion and misunderstanding would result from an attempt to do laboratory work in a shop, an office, or in a building under inspection.

#### Distinction Necessary

The distinction between the Code for installation rules and that of the Laboratories for construction and test of appliances is a necessary and proper one now long established and operative.

Naturally out of the Laboratories' experience and constant contact with the manufacturers, questions come up suggesting revisions or additions of one sort and another to the installation rules of the Code. The Electrical Committee looks to the Laboratories for suggestions along these lines and depends upon it for data on new materials. On the other hand, Underwriters' Laboratories endeavors not to "approve" a device or a material which as it is to be installed and used will violate a Code requirement. Opinion may and does differ as to the facts and the applicability of a Code provision to a special new material or variation from older

(Continued on Page 28)

# How One Contractor Is Selling to Industrials

**A** PROBLEM that is continually cropping up to disturb the relations between contractors and their jobbers is: Who shall sell the smaller industrial? The contractor feels that this class of business properly belongs to him and that the consumer has no right to discounts as low as he himself can get. He has little fault to find with sales to the large industrial by the jobber, for he realizes that he could not hope to cope with this business. But the smaller factory and the office building and the loft—that is business that should come to him.

To be as brief as possible, the jobber sympathizes with the contractor, but does it in theory only, not in practice, claiming that if he doesn't sell to the small industrial some other jobber will.

However, the business is always there. The contractor can go out and get it if he wants to. How? Purely on a price basis. The only reason the small industrial buys from the jobber is because he has been told for years that he can buy as cheap as the contractor and the contractor has not made any effort to counteract this condition. If the contractor has a set-up to handle this business and wants it he can get it by offering the same price as the jobber does. Any idea that this cannot be done is dispelled by the experience of the M. H. Salmon Electric Company of Syracuse.

For the past ten years the Salmon Company has been doing motor repair work for about 50 percent of the total number of industrials in Syracuse. In the past three years this company has been able to get the supply business of 10 to 15 percent of these same customers. Now they buy regularly from Salmon, never think of going to the

**T**HE report of the A. E. I. Trade Policy Committee, made in March of this year, pointed out that the practice of jobbers selling to the smaller industrials was the cause of more hard feelings between jobber and contractor than any other one thing.

A number of remedies were proposed for this condition by those who replied to the Trade Policy Committee's questionnaire. Some of the means suggested were education of the jobber, elimination of cut-throat competition between jobbers and other ideas which in the final analysis were somewhat Utopian.

Thus we are glad to publish the story of one contractor who has taken his difficulties to his best doctor—himself. M. H. Salmon of Syracuse has not been content with wanting to sell to the smaller industrials; he is doing it and, it may be added, very profitably. His methods described below will be of interest to all contractors who feel they should be handling this class of business.—The Editor.

jobber and in many cases do not wait to be solicited, but place their orders by telephone.

How has Salmon put this over? First and most important he has met the prices that the jobbers offer. That is something almost any contractor could do. But the next question is, "Where does his profit come from?" if he has to sell at the price he buys at—and with the industrials getting the same discount as the contractors, it looks as though this would be the case.

## The Answer

The answer, according to Mr. Salmon, is volume and turnover. As long as the contractor buys in the same quantities as the small industrial the price to each will be the same. Suppose, for instance, that the contractor buys enough conduit or enough wire for three or four or five factories along with his own needs, then his discount is going to go up two or three or possibly ten percent. What happens then is that he can give the industrial the regular wholesale discount and still have the two or three or ten percent left.

As a matter of fact, if a jobber knows that a contractor is going to bring him more business by this plan he will be inclined to cooperate. For instance,

the Salmon company has an arrangement with one jobber whereby it gets a five percent better discount on carton quantities than is usual. The company also is enabled to buy conduit in any quantity at the five-thousand pound price. This gives a spread of about 23 percent on small quantities and about 7 percent on orders of around 1,000 feet. Once in a while the company is able to put in an order for a carload.

Let's see how this works out; if there is any money in it for the contractor in the long run. Mr. Salmon's books showed him that during a recent year he made \$12,000 worth of sales of material alone to industrials. On this he made a net profit of 5 percent or \$600, without a single string tied to it. Not a great deal of profit on that much business? But the complexion of the thing changes when we get to the matter of turnover. This \$12,000 worth of business represented an annual turnover ratio of ten, meaning that at no time did the Salmon Company have over \$1,200 invested in stock. A net of \$600 on an investment of \$1,200 is a clear profit of 50 percent a year. As a matter of fact the percent of net return on the investment was actually higher since much of the material was stocked on consignment and another large part was delivered direct from the jobber to the customer.

It is not attempted to sell the industrials everything they might require. The company stays away from specialties for the reason that they are not always apt to function properly or accomplish what the buyer expects and then the device is sure to require a lot of service or even to be returned. Unless the services of a high-grade engi-



neer are available the Salmon company doesn't sell any device it does not understand thoroughly.

All these industrials are as a rule very prompt pay and this enables the company to discount all its bills.

Some overhead of course should be charged against sales of wiring materials to the industrials and Mr. Salmon has determined this at 10 percent.

If there was a large delivery, storage or selling expense to be charged to these sales the plan would not work out at all. As far as delivery is concerned the Salmon Company must maintain a truck for its own deliveries to jobs and with good management this truck can be used for deliveries to industrial customers in a way that does not conflict with regular deliveries.

Where the expense of selling is concerned this might be a big item if it were not for its production of business other than the mere sale of material. But, since the business of the Salmon Company is entirely contracting and motor repair work, selling has to be done for both accounts and sales of wiring materials to these same customers entails no added effort.

#### Getting the Business

This is not an unusual condition among contractors who do any business with industrials; whenever they are in touch with this field at all they are in position to follow Mr. Salmon's example in working up the sale of materials in addition to whatever contract work they are doing. Not long ago THE ELECTRAGIST published an article by A. L. Pomares, Vice President, Austin & Moore, Inc., Long Island City, who related how his company had gone after motor business on substantially the same basis.

It is a fact that the jobber has no unbreakable grasp on this business if the contractor goes after it on sound economic lines. But first he must realize that the customer doesn't care a whoop about Trade Policies or good relations between contractors and jobbers; all he wants is good material when he wants it and at discounts in line with those he has been receiving.

That is where, by this system, the contractor, like Mr. Salmon, can beat the jobber to the tape ninety-nine times out of a hundred, provided he can meet the jobber's price. In the first place his service is almost bound to be better than that of the jobber. He is on

the ground and without much extra work can make calls twice or three times as often as the jobber's salesman. Secondly, he can become much better acquainted with his customer than the jobber can and whenever the customer needs some real engineering advice about buying materials he is right there to give it. And last, whenever the industrial wants stuff right away, it can be had without any long-distance telephoning or wiring and waiting a day or two for express shipments. Thus while the contractor can't do any better on prices for the industrial than the jobber can he can render service that the jobber cannot hope to match and on that basis, prices being equal, the industrial is an easy customer to get and to hold.

The jobbers are not averse to doing business this way either, nor is that strange. All they ask for is the business. If it can come through the contractor, so much the better, and a number of them have cooperated with the Salmon Company in routing it this way.

At first Mr. Salmon tried the system rather tentatively, because it was best to find out how it would work before the company got into it too deep. There are approximately 250 firms in Syracuse that can be classed as fair sized industrials and by last spring thirty of these were on the books of the company. Solicitation was and will continue to be limited entirely to local firms, for Mr. Salmon has no intention or desire to enter the jobbing lists.

However, there is no size-limit set when Mr. Salmon chooses what industrials to solicit. If the salesman can get close enough to the electrician on armature winding and the electrician has something to say about the purchase of his supplies, then he goes after the purchasing agent, no matter what the size of the plant is.

Sales of supplies at the first of the year were averaging a thousand dollars a month.

In February of this year the total month's business increased to \$1,400; in March it mounted to \$1,638, and has shown a fair increase each month. In addition there came in, directly through this intensive calling on prospects, several wiring jobs and motor repair jobs, and in one case an \$8,000 order for all the electrical material for a large summer estate being built by an executive

of one of these manufacturing plants. This order came solely by the help Salmon was able to give in laying out the work.

Decidedly, the jobber doesn't own the industrials where M. H. Salmon is concerned. His method of getting his share of this business is so simple that it seems strange so few have thought of it before. When enough contractors can adapt it to their own circumstances that particular section of the A. E. I. Trade Policy dealing with jobbers' sales to industrials will find itself solved.

Care and thought must be given to the sales plan—but that's another story.

### This Disease Needs Strong Medicine

A new name for an old disease has been discovered by the Association of Certified Electricians of Northern Ohio and the manner in which a recent bulletin of the organization describes the symptoms and results of the illness makes good reading for electrical contractors. The common or garden name for the disease is "price cutting," but the A. C. E. terms it "Dementia Electrica."

"This dreadful disease," says the bulletin, "has become an epidemic and has played such havoc with the electrical industry that bankers and jobbers have been looking for some way to check its further development.

"Dementia electrica is doing to the electrical contracting business what the boll weevil is doing to the cotton industry or what tuberculosis does to our lungs. It destroys everything we have, and does not leave a thing, not even the sympathy of our business associates.

"A recent bulletin describes this disease as follows: 'Dementia electrica is the term applied by brain specialists to contractors who have an uncontrollable mania for taking contract jobs at less than cost.'

"The first stages of dementia electrica are very pleasing to the contractor, especially the new contractor inasmuch as he finds it very easy to get plenty of jobs and he naturally thinks there is nothing wrong with him or his business methods. The sad part of this epidemic is that the contractor who has it bad is the last one to realize it and often refuses to even try to cure himself until it is too late.



# Jerry's Sprained Knee

## and What It Cost the Boss in Time Lost, to Say Nothing About Compensation Insurance, Hospital and Doctors Bills

ONE Monday morning the small delivery truck of the Right Way Electric Company drew up before the partly-finished shell of a two-family house in a Westchester suburb. In it were Mike Dillon, one of the company's foremen; two journeymen, Joe Kaufman and Jerry Bryant, and a helper, Johnny Hall. And with them, unobserved, rode an Imaginary Bookkeeper to record the figures for this story.

The two-family house was to be a rush job, for the general contractor wanted to start the plastering as soon as possible and the two journeymen and the helper were counted on to do the roughing-in in the shortest possible time. Thus they were there bright and early and the foreman explained the layout to them quickly but thoroughly. Meanwhile the Invisible Bookkeeper figured on the cost of the job as he had heard it mentioned in the office.

"Let's see," he said to himself. "The Boss took this job for \$286. He figures his overhead at thirty percent and his profit at ten percent. Working it out backwards that means his prime cost for labor and materials is \$200, his overhead is \$60 and his net profit is \$26. It sounds fair enough if the men don't waste any time."

Apparently they weren't going to. Already they were unloading their materials and tools from the truck and carrying them into the house. Mike, the foreman, swore moderately when he saw Jerry unload a somewhat battered ladder and hoist it on his shoulder.

"Say, Jerry," he growled. "Thought I told you to get a new ladder from the stockroom? That one has a weak side and that patching with wire is apt to give way any minute and dump one of you birds on the floor. Put that back and I'll send out a new one during the morning."

"Oh, what the deuce," Jerry told him with a grin. "We'll have this job half finished before you could get a new

THE figures on which this short story is based come from the president of one of the large contracting firms of New York City, and he in turn obtained them through careful checking of a minor accident on one of his jobs. Purposely he put the costs as low as he could possibly figure because he decided that it would be better to underestimate than to appear to exaggerate even a little. Even so they are impressive, showing as they do that even an unimportant accident may eat up a good part of the profit on a moderate-sized job.  
—Editor.

ladder out here, Mike. This'll do for today.

So, seeing it was a rush job, Mike capitulated.

"But be darn careful with it," he warned, and after seeing the last coil of wire into the house drove off to a job across town.

Inside the work went rapidly. The conduit mounted without pause to the ceiling of the first floor and finally the joint of the last length raised itself out of Jerry's reach as he stood on the newly-laid flooring.

"Hey, Johnny," he yelled, "on deck with that ladder."

And Johnny got on deck with the ladder pretty quickly, knowing that this was a rush job and that Jerry was a fast workman, rush job or not. Just behind him came the Invisible Bookkeeper.

"The Boss will make some money on this job," he thought, "if these lads keep on working like this."

Johnny spread the ladder out and shook it testingly. He ventured some advice.

"Go easy with her, Jerry. Looks to me like she's mighty weak on that one side."

"Listen, kid," Jerry told him, "I been going easy with ladders since before your name was dry on the birth lists."

So the helper shut up and watched

Jerry mount the ladder, carefully placing his weight on the good side. Jerry knew how to do it all right. The helper handed him the pipe, already cut to the right length and threaded and Jerry swung it into place skillfully. All was lovely until Joe Kaufman, the other journeyman, called up from the basement where he was setting the service main.

"Who the deuce has got that set-wrench?" he wanted to know.

Jerry looked around from his work and his eye lit on one end of the wanted wrench protruding from the space between the wall and the toolbox.

"There it is, Johnny," he told the helper.

"But Johnny failed to catch the exact direction of Jerry's nod and halted irresolutely. So Jerry pointed at it, leaning over a bit as he did so.

That was the end of that ladder, for as Jerry inadvertently threw his weight to the weak side the leg gave way and a surprised journeyman, a piece of conduit, six pipe wrenches, and a wrecked ladder piled up on the floor simultaneously.

Johnny grinned admiringly at the command of sulphurous English displayed by his fallen boss. Meantime the Invisible Bookkeeper looked at his watch. It was exactly twenty minutes after nine. After an ineffectual effort to get up, Jerry commanded:

"Hey, kid, wipe that grin off your face and give me a hand here—musta twisted my knee pretty much. And if you say 'I told you so,' by gravy, I'll knock you kicking, bad knee or not."

By that time Joe had come running up from the basement and between him and Johnny they got Jerry to his feet. He tested his leg gingerly and decided he couldn't stand on it.

"The doctor for you, bozo," said Joe, but Jerry shook his head.

"A little liniment and a bandage is all I need," he deprecated, "and if you'll help me down to the drug store we can get those. Johnny needn't come

—let him finish up the pipe in this room.”

Johnny did. But it only took him twenty minutes and for forty minutes more he sat around and wondered if he was ever going to make enough money to buy his girl that ring she wanted and just how good this Tunney really was and all the other things kids wonder about when they haven't anything else to do.

At the end of that time Jerry and Joe showed up and the Invisible Bookkeeper jotted down two items as follows:

*Time lost for two journeymen, 1 hour .....\$3.00*  
*Time lost for one helper, 40 min.. 0.65*

“How's it feel, Jerry?” Johnny asked.

“Rotten, but I can get around on it.”

He could after a fashion, but it slowed up his work at least 50 percent, the Invisible Bookkeeper figured, and when the foreman got around again late in the afternoon it was evident that enough was going to run over to keep a man busy an extra morning.

“How come?” he wanted to know. “What's the idea of loafing on the job this way?”

So Jerry took some more time off to explain the accident. Following that the foreman spent five minutes delivering a lecture on the dumb bozos that would use a rickety ladder. Then it took him fifteen minutes to look through all the pockets and boxes in the truck to find the blankety-blank accident report blanks and another fifteen minutes to fill one out, since the foreman was much better at wiring than at literary pursuits. That done, he drove off after telling Jerry to be sure to see the doctor.

“It's paid for,” he commented, “and we might as well use that compensation insurance when the Boss has to buy it any way.”

By the time the men were ready to knock off work the Invisible Bookkeeper had these additional figures in his book:

*Foreman's time, investigating and making out report—45 min....\$1.50*  
*Journeyman's time at doctor—1 hour ..... 1.50*  
*Journeyman's time extra on job—4 hours ..... 6.00*

Being a pretty active sort of Invisible Bookkeeper he caught up with the foreman before he got back to the office and rode in on the tailboard of the truck. There Mike turned in the accident re-

port and next morning it traveled these rounds: Superintendent, office manager—who spent ten minutes on the phone with the doctor to whom Jerry had been sent—, bookkeeper and the stenographer who sent out the notification to the insurance company.

The Invisible Bookkeeper followed all these operations and then put down their cost as closely as he could estimate it. The item read:

*Expenses of time in office on accident report .....\$5.50*

He proceeded to collect all his figures on this very minor injury to a good but careless workman. They added to the surprising total of \$18.15.

Then he dug out his figures on the cost of the job and the net profit. The latter was \$26.

“Gee,” he thought, “wait until I show the Boss this. One sprained knee costs him \$18.15 out of a \$26 profit. I'll bet he's going to see that the men have good ladders after this.”

However, the Boss was busy when the Invisible Bookkeeper went to the door of his private office. That is, he had his feet on the desk and had just accepted a cigar from his friend, Ed Flannigan, the masonry contractor, prior to going into conference with him on the World's Series, their respective golf games and whether or not women looked better with long or short skirts. Having decided something or other on these matters their minds strayed casually back to business.

“How're things coming?” Ed Flannigan wanted to know.

“Pretty good, Ed,” said the Boss. “We got the wiring on all the two-families in that new subdivision on River Road—about a hundred of them. Not big work—had to estimate pretty close to get them—but we figure to make close to \$30 per house.”

The Invisible Bookkeeper tried to break in and tell the Boss that there was at least one house he wouldn't make that on, but Ed Flannigan's hearty boom drowned out the invisible whisper, if you could call it that.

“That's fine,” he said approvingly. “Not so good with me. Had a bad accident on the new bank—scaffold gave way and dumped five boys to the basement. Nobody killed, but all of 'em pretty badly hurt. It's costing me a lot of jack, too, the way it's got the rest of the boys wasting time talking about it and looking over their shoul-

der to see if their ropes are parting.”

“Tough luck, Ed,” commented the Boss. “I've been pretty lucky lately—had a few minor accidents on this subdivision job, but nothing to amount to much. And of course they haven't cost me anything—the compensation insurance takes care of it all.”

The Invisible Bookkeeper tried again to interrupt and show the figures on just a minor accident that had taken about 65 percent of the profit out of one particular job. But the Boss and Ed Flannigan evidently couldn't see him at all, for they walked out of the office without even turning their heads in answer to his explanation of accident cost.

And, the Invisible Bookkeeper concluded, the chances were that that Boss never would see or hear him.

## Underwriters' Laboratories

(Continued from Page 24)

practice. The proper, orderly and final adjustment of such cases often requires much time and discussion and has occasionally been complicated by the injection of interests or points of view not of a purely engineering character. This is not strange when the great number of persons, companies and interests of all sorts are considered. It has, however, always been the sincere purpose of both the Electrical Committee and the Laboratories to coordinate their efforts to the end that both in installation rules and in the judgment of appliances reasonable safety may be maintained while full opportunity is given for new developments to find proper recognition.

These are problems of human relations as well as of engineering. They are inevitable accompaniments of any system of standardization and rule enforcement.

Quite recently representatives of the electrical manufacturers and of the Laboratories have agreed upon a clear statement of procedure for the Laboratories in dealing with new problems and in correlating the Laboratories' work both in scope, time and method with the work of the Code Committee and its Article Committees. It is hoped and expected that this clearly stated procedure of which public announcement will shortly be made will remove much if not all of the misunderstandings or disagreements which have formerly embarrassed and obstructed the work of both organizations.



# Savings Through Job Management

## CHAPTER III\*

### Fatigue Losses

### Subordinate Foremen

### Specializing

### Handling of Material

### Evils of Quantity Production

By M. S. MacNAUGHT

**L**EAVING the foreman, we come to a consideration of the proper use of the journeymen and helpers. The writer wishes to stress one feature in this regard, namely, the desirability of robust physical specimens whenever possible. Really healthy men are essential if a full day's work is to be expected. The weakling, and the small, light man usually cannot stand the gaff of heavy construction work; their logical field is finishing up a job, or doing telephone, low tension and light work.

Not only should the men be in good condition when they are hired, but every effort should be made to keep them healthy. Fatigue, occasioned by overtime work, or dissipation, must be guarded against, for without fail the daily output of tired men is less than that of those perfectly rested.

Not only do men slow up at the end of a regular day, but the man who has worked all evening, or half the night, simply cannot do his usual quota of work the next day. His human machinery may be willing to try, but continual effort produces a fatigue that the brain cannot conquer, a fatigue that only proper rest can relieve.

#### Overtime

Because of the physiological structure of every man, contractors who expect a maximum day's work ought in justice to themselves to prohibit any work which requires overtime pay. Every time they put more than a regular week's pay in a man's envelope, they are doing an injustice to themselves, and in many cases to their customer, and to the man.

Fatigue not only reduces the ability to work at utmost proficiency, but it

also increases susceptibility to accidents. Carefully kept insurance records have proven conclusively that accidents occur most frequently when men are tired, their faculties dimmed by exertion and natural reactions slowed down to such an extent that impending danger catches the victim off his guard.

Faced with such a condition, the cautious contractor sees a chance to reduce his accident rate, with resultant lowering of his insurance costs—and of still more importance, increased efficiency of his working crews. Every accident causes lost time, while the man is having his wound dressed, and afterward, due to the fact that his injury may seriously hamper his active work.

#### Holidays

In the ordinary course of events, holidays should perhaps be given a greater welcome among contractors. Bringing an opportunity for rest and recreation to the employees, they are a powerful preventive of fatigue. To be sure, they sometimes break into a week when every hour of work is vitally needed; but the chances are that the rate of production per hour during a short week is somewhat higher than during a full 44 hour week. In other words, the contractor's dollar of wages buys more finished product when a holiday offers opportunity for rest.

The actual administration of the men as they work is sometimes solely the function of the foreman; in other cases, sub-foremen, straw bosses, gang bosses, call them what you will, handle small groups of the men, these subordinate foremen being responsible to the head foreman, receiving their instructions from him. In the case of really big construction work, with thirty or forty

or more electricians at work, there is a very real need for division of the workmen into gangs of ten, each under the eye of a good journeyman.

This man should be an expert on the work he is overseeing, and if he is of the proper type, he should be able to turn out a good day's manual labor while directing his men. A straw boss should always be willing to work hard, setting the pace for his gang, at the same time correcting faults, instructing and laying out work. The proper use of the straw boss inevitably results in more efficient production, for he can watch his few men far better than a single foreman could watch every man of the forty or fifty men on the job. Mistakes decrease, teamwork is improved, material is used most effectively.

#### Straw Bosses

Along the line of straw bosses, a word might be said about the use of two foremen on a job. It sometimes happens that a shop has a man who is an excellent handler of pipe installation, a man who understands roughing-in thoroughly, and knows how to handle men on such work, but who is not sufficiently technical to readily grasp the details of special conditions in the finishing phase of the job. A shop which is handling a considerable quantity of big construction can in many cases use one man to supervise the rough work, and then substitute a man with more specialized knowledge of the completion of the job.

Such substitution requires tact, and also presupposes that the finishing expert is put to work on the job several weeks before the roughing-in foreman leaves, in order that he may learn the details of the job thoroughly. This

\*Chapter I appeared in the August issue, and Chapter II in the October issue.



shifting of foremen cannot wisely be done on a small job, is of questionable value on the medium size job, and should only be regularly considered on contracts in excess of \$50,000.

It has been found a profitable scheme largely because it recognizes that in many cases the thick-necked, rough and ready foreman who delights in rapidly installing pipe is not wholly fitted, either by nature or training to patiently supervise the rather slow process of finishing up a high grade job. And vice versa, the quiet, careful, clean workman who is happy in making an intricate telephone or similar system work perfectly, is usually unfit for a foreman's job when the concrete is flowing freely and brute strength counts for as much as brains. If the two different natures can be adapted to their proper sphere, and each big job divided accordingly, economy is often the reward.

#### Specializing

One tremendous advantage of the big job over the small is that the work of the individual men can be specialized, with resultant increase in efficiency. For instance, on a building of good size, one pair of men can be detailed to make up typical lengths of conduit, while another pair installs it as fast as construction conditions permit. In this way, one group of men putting in outlets on floor after floor soon memorize typical layouts, become better acquainted with easy methods of surmounting special structural difficulties, and learn other means of speeding up their work.

They produce more, quite unconsciously, this for the reason that constant repetition cannot help but give greater facility. The workmen, without actually killing time, cannot, therefore, do anything but turn out more work per day. The lesson to be learned is to keep a man on one type of work just as constantly as possible. It may be roughing-in conduit; it may be handling fixtures; it may be setting panels, or switches or plates; it may be installing telephones, or calling systems; anyhow, keep him on one thing, *never* have him set panels one day, hang fixtures the next, put on plates the next, and tinker with telephones on still another day. Labor is cruelly wasted in that way.

To sum up, the most satisfactory general rule to follow in the handling of building labor is: Keep every man busy

every minute he draws pay, on directly productive work. That is the ideal condition; and contractors will become more successful in direct proportion to their care in observing such a doctrine.

The efficient handling of material occupies a prominent place in the art of job management, every refinement resulting in reduced labor costs, reduced teaming and breakage charge. Yet this phase of construction has not received the attention from contractors it so richly deserves; and as a result, those executives who do decide to study their material handling problems are sure to find themselves in a position to reduce operating costs below that of their less progressive competitors.

#### Handling Material

It is impossible to describe in detail the methods for handling every one of the many conditions met with on construction work; every job is different, with individual difficulties which cannot be conquered by applying a single magic formula. But there are certain principles covering some phases of construction work which can be pointed out in a general way so that the contractor will at least know in what ways his material problems can be attacked.

Every minute spent by men in the handling of material other than at the time of actual installation is non-productive. Conduit which must be moved from one location to another represents a certain increased cost over conduit which arrives at the right time and needs only to be delivered in one place.

The contractor can profitably spend part of his time teaching his foremen and purchasing agent to cooperate so that material will be listed for shipment at exactly the *right* time. It should arrive at the job just a few days before it will be actually used. For instance, a ten-story building may require a hundred thousand feet of conduit. If it is all shipped at once, it must first be piled somewhere in the excavation, or on adjoining property. Then as the building goes up, it must be shifted from time to time to avoid conflict with other trades. And finally, it must be carried to the upper floors as required.

All this involves a great deal of waste time, for each time the conduit is moved, men must be taken from regular work to act as laborers. The preventive! Order material in one big lot to get the right price, but see to it that it reaches the job only as needed.

Usually an order can be shipped in several installments, either directly from the jobber's storehouse, or from the contractor's stock room. Thus, conduit might be shipped in twenty thousand foot lots. When it arrived, it could be unloaded at the general contractor's hoist, loaded on and delivered directly to the floors where it is to be used. The hoist may cost five dollars an hour—but it is decidedly worth while, for it saves the labor cost of handling conduit length by length up the side of the building, with one man on each floor.

When material does arrive, it should be stored properly, and in the right places. Conduit, for instance, should be piled horizontally in a place reasonably free from moisture, and protected from mechanical injury which might crush it or harm the threads. Cabinets should be piled on wooden supports, care being taken to keep them flat so they will not warp. A warped cabinet throws screw holes out of line, and causes no end of trouble to bring the edges flush with the partition lines. Fixtures and similar breakable material should be stored in a protected location; and plates, switches, etc., should invariably be kept in a theft-proof place. Practically every bit of material the electrician uses has its peculiarities which require proper storage, the penalty for improper care being labor lost repairing the damage, or money lost replacing broken, or stolen material.

#### Storing Material

For most efficient handling, material should ordinarily be located near the center of the area where it is to be used. Thus, conduit should be piled at a convenient point near the middle of a floor, with tool chest and pipe vise handy. It is then equally accessible to all men working on the floor, and a minimum of time is wasted walking back and forth. The same applies to wire, fittings, fixtures, etc.

Not only should material be placed in a central location, but to place it there most efficiently, a helper or stock clerk should carry it from floors below, or from the delivery truck. Journeymen should not be employed on anything except directly productive work. Then, too, small material such as tools, boxes, etc., should be delivered by a helper or apprentice directly to the man as he works.

On a big job, an apprentice at low wages earns his pay many times over

if he just makes it his job to keep in touch with every gang, running their errands for screws, drills, dies, fittings, etc. A journeyman at \$1.50 an hour wastes a lot of time and money if he climbs down several ladders to the shanty for a drill or screws, and then journeys back again. Such a trip may easily cost fifty cents and twenty such trips a day would be conservative on a big job. So an apprentice who attended to such work would be worth very close to \$10 a day, and probably would not cost over \$3.00.

On some jobs, being carried on at a considerable distance from the shop, arrangements may be made to buy all material locally, at a respectable saving over purchasing at the home office, and re-shipping. Expressage and freight are items of large size on distant work, and any method which eliminates them wholly or in part is worthy of adoption. Not only is cartage expensive, but all too often material is delayed or lost in shipment, with consequent interruption of efficient work.

Local jobbers are very often ready to welcome the trade of an out-of-town contractor, and will agree to fairly good price concessions. Usually the saving in freight expense more than balances the somewhat increased cost from a small local man, although generally these jobbers are glad to give close to rock-bottom prices. That, of course, depends on local conditions, but a trip to the town before actual construction starts can often be turned into a profitable journey simply by facilitating advantageous relationships with business houses.

So far as the actual installation is concerned, assuming good material, and proper handling of men, the use of labor saving devices to prepare and install the system is of major importance. For instance, if a large amount of conduit is to be used, rather than cutting and threading by hand, a power drive should be employed. Such a device speeds up the production of one man enormously, and pays for itself many times over in the course of a year.

Portable pipe benches, power drills, ratchet die stocks, pipe benders and similar labor-conserving implements are desirable, and often essential on every job of consequence. Multiply man power at every opportunity! We ride in automobiles because manufacturers have invested millions in machinery to

supplant the slow, painstaking craftsman. As a class, contractors simply must take a lesson from manufacturing progress and adopt advanced mechanical contrivances whenever they make possible even a slight saving.

Then too, all through the job, material can be bought with an eye to saving labor. Panels that mount easily in the boxes; solderless wire connectors for making joints and hanging fixtures; fittings on exposed work that call for a minimum of labor; these and many others contribute to efficient installation of material, and thereby have their part in making every job profitable.

While the electragist can deduce methods suited to his special case from these general principles of efficient job management, the writer wishes to point out that our industry differs from many others in this respect; maximum production efficiency is not necessarily reached when all possible business is obtained.

Automobile and other manufacturers may be able to turn out 100,000 units at a cheaper rate than 10,000—but they handle a routine product, repeating identical operations countless times. Under such conditions, increased quantity can often spell increased efficiency.

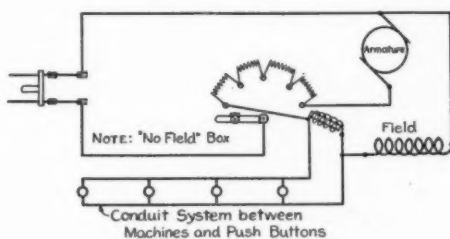
In our business, practically every job is special, and requires thought, attention, planning and management. The more jobs, the less personal attention can be paid each one, and so instead of greater efficiency, we encounter lower efficiency.

The quality of the finished product, with the enduring reputation it gives, and maximum profit per dollar of gross business both call for only that quantity of annual contracts that can be given personal attention. Why wreck a good small business by unwise expansion, when by remaining small and adopting or creating the right management methods a virtual gold mine can be created?

## Scheme for Stopping Motor from Remote Points

By J. A. HAWTHORNE

A CONTRACTOR was called in to a woodworking plant to suggest some form of safety device for stopping a motor from one of many remote points in case of emergency.



The plant consisted of ten woodworking machines such as lathes, planers, band saws and circular saws, etc., all of which were driven from a line shaft, the line shaft being driven by a 15 H. P. direct current motor.

After inspection of the motor and starting equipment the contractor decided to run a conduit system from one machine to another and hence home to the starting box. At each machine a substantial push button was conveniently located and was labeled "Emergency Button to Stop Motor." The wiring diagram is submitted herewith. It

will be noted that the push buttons are all connected in parallel and when the circuit is closed it forms a shunt around the retaining magnet and demagnetizes it which permits the spring of the handle to bring the handle quickly to an open circuit position.

As will be noticed in the diagram, the starting box is of the "No Field" type, consequently short circuiting this coil will cause no material rise of current in the field circuit. Then, too, the action is so rapid that little or no dangerous arcing would occur between adjacent contact points on the box.

If the starting box were of the "No Voltage" type it would be impossible to use this method because in this type the retaining magnet is directly across the line rather than in series with the field and a "dead short" would result. It would be possible, however, in this case to use a number of normally closed push buttons or switches in series with the "No Voltage" release coil, so that operating any push button would open the circuit through the coil.

This is a simple and inexpensive method by reason of the fact that relays and solenoids are eliminated.







power, run to the light and power service switches in the boiler room and from there feed to the main feeder panelboard located also in the boiler room a short distance away. Lighting circuits are supplied by one panelboard on each of the banking floors, all of which are fed by one vertical riser consisting of three 500,000 c. m. cables. Each of the seven stores on the ground floor is supplied by a separate set of feeders from the main feeder panelboard.

Power circuits for the centrifugal fan motors, refrigerating plant, boiler room pumps, battery charger for clock and bell system, all located on the basement floor, are carried direct from the main feeder panelboard. Power for the ele-

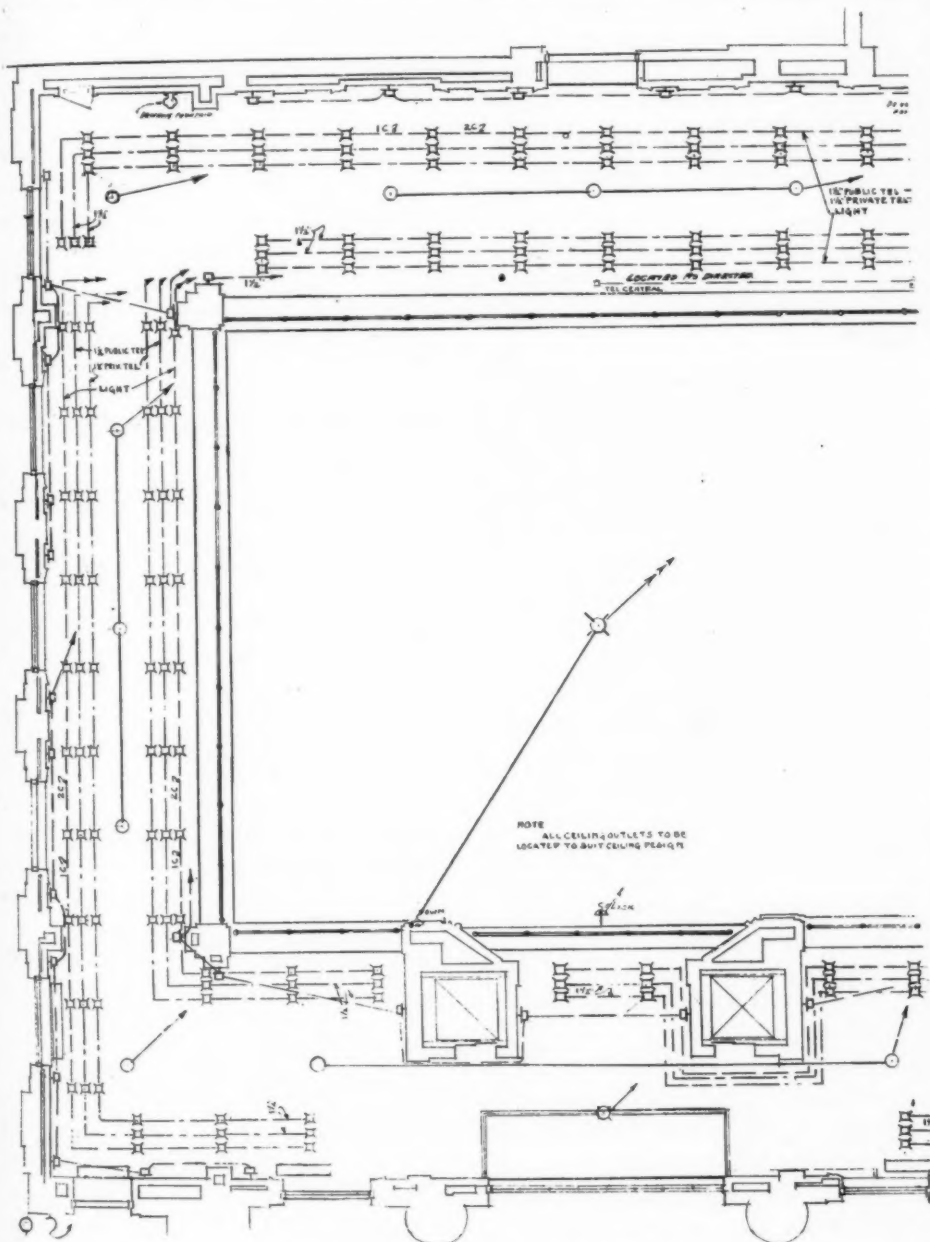
vator motors in the machinery room located on top of the building is furnished by three No. 2 conductors enclosed in 1½-in. conduit and run next to other power, light and phone risers near the freight elevator shaft in the rear of the building. Private telephone as well as bell and annunciator conduits on each of the floors connect with an inter-connecting box. This box in turn taps off from a vertical riser which is composed of three 1½-in. conduits terminating in an inter-connecting box in the basement. The public telephone system feeds from a large box in the basement through a vertical riser consisting of a 3-in. conduit to a public telephone connection cabinet on each floor, to which each of the branch tele-

phone conduits on that particular floor run. All of these risers run on two opposite sides of the freight elevator shaft which is located in the rear of the building on the right hand side.

The bells, clocks and annunciators as well as private telephones are operated from storage batteries located in the basement and which are charged by motor generator units also in the basement. All low tension wires from the various floors which feed through the three 1½-in. conduits to the basement floor terminate in a large rack, containing inter-connecting strips. It is possible in this rack to inter-connect any two openings on any floor or any two outlets in the entire building. The public telephone cables from the various floors terminate in a interconnecting box in the basement to which service cables also terminate, thus allowing for connections to the local system.

The banking section of the basement floor is occupied by the safe deposit vault, safe deposit rooms and committee rooms. The illumination scheme throughout this section is such as to closely resemble daylight. This is made possible by the use of high intensity semi-indirect white glass fixtures. In the safe deposit department are a number of private booths for the use of patrons, each having a ceiling light controlled by a door switch. There is also in each booth a small light located about three feet from the floor, by means of which any object on the floor can be clearly defined. Outlets for both private and public telephones are located at convenient points.

Outlets are provided for communication, alarm and lighting purposes at frequent intervals throughout the entire floor space occupied by the bank on all of the four floors. In each of the two rooms in the safe deposit department in the basement are two rows of outlets in the floor for private and public telephone and light. These rows are six feet apart. In one room the triple gang outlets in each of the rows are five feet apart and these three-gang floor outlets in the other safe deposit room are at intervals of six feet. There are 10 sets of outlets in one room and 12 in the other. Conduit runs between the outlet boxes and to cabinets. These are 1½-in. for public and private telephone service and 1 in. for light. All connections are made to these under-floor lines from the light and intercon-



Wiring Plan of the Mezzanine Floor

necting cabinets located in the basement. Both private and public telephone connections are found in the vault itself for use in event an employee becomes locked in.

On the main banking floor there is a large central space for the use of the public, with cages extending along the side at the right of the main entrance and the side opposite the entrance. On the third or left hand side there is a counter only. Underfloor conduits carrying public telephone, private telephone, dictaphone, telautograph, and light connections are run under the cages, with five-gang outlets spaced five feet apart. A five-gang floor outlet for the same service is also located in the information booth in the center of the public space. Conduits for the lighting circuits are 1 in. and for all other service are 1½ in. In each case 10 to 12 floor outlets are served by one home run from the proposed cabinet.

#### Underfloor Conduits

"Day raid" outlets in 1½-in. conduit are also run alongside of the previously described system of conduits with outlets at the same locations.

Two similar sets of these underfloor conduits are located in the working space on the left hand side of the banking floor, one near the outside wall with outlets spaced 10 feet apart and one set close to the counter with outlets at four-foot intervals. Here, there are 8 outlets in the one case and 10 outlets in the other which are served by one home run.

Three section Conduo-base is run along the back of the counter at the front of the cages the full length of each side. Each run is tied to the inter-connection box on the banking floor by means of three 1½-in. conduits.

On the first balcony or mezzanine floor, are floor outlets for private and public telephone as well as light. These run in two rows, 6 ft. apart on each side of the open shaft space. All of the 5-gang outlets are spaced 6 ft. apart.

The fourth floor has a large centrally situated room, used for committee meetings, the various work rooms of the bank being located in the space on each side. Two rows of conduits, 8 ft. apart run in the space for workrooms on each side and supply floor outlets for private and public telephones and lights. These outlets occur every 6 ft. Outlets for telautographs, annunciators, and dicta-

phone are found on the walls at frequent intervals. All light circuits and power circuits for business machines are fed from a panel located on this floor and the low tension circuits terminate in the inter-connecting box are also located on this floor.

Lighting fixtures that are located in rooms or compartments that have the controlling switch on the outside wall, have a small red light in circuit with this switch to remind the passerby that

the light is still on. On the fourth floor, many electrical banking appliances are used. Franking machines, check cancellers, typewriters, and bookkeeping machines all are operated electrically.

The E. C. Ernst Company of Washington, D. C., were the wiring contractors and the fixtures were installed by the O. R. Evans Company, also of that city. Alfred C. Bossom, New York City, and J. H. Sibour of Washington, D. C., associate, were the architects.

## Contractors Will Lose Less Money If They Trust Fewer People

A "CREDIT letter," originally written for use among the customers of a plumbing jobber, has been sent to all the members of the Florida Association of Electragists by Charles E. James, secretary, on the ground that it applied to electrical contractors as well as to plumbers. It reads:

"Do not allow a smooth manner and good appearance to be a basis for credit.

"Have the courage to turn down dubious accounts without hesitation.

"If you do not know your prospective customer to be responsible and able to pay promptly, don't do his work until you find out. Your banker, credit bureau or supply credit man can find out definitely for you. Don't take a chance in the dark.

"Have everything definitely understood before the work is started.

"State your terms definitely, and do not allow the customer to dictate to you.

"When a payment is due on a contract don't put any more material or labor on the job until you are paid. You have performed according to contract. Make your customer do the same. He will have more respect for you and if anything should go wrong, you do not stand to lose much.

"Explain that you must know when to expect payment in order to meet your own accounts.

"Send your bills regularly.

"Personally examine all uncollected accounts and get a reason for any delay in payments.

"Adjust all complaints promptly and definitely so that unadjusted items cannot be offered as an excuse for delayed payments.

"Do not hesitate to deal quickly with customers who ignore requests for payments, or who break promises, trump up excuses or complaints to dodge responsibility.

"Never allow the allotted time to elapse before filing a mechanic's lien.

"Do not hesitate to lose a few customers who do not pay promptly.

"The reputation that your bills must be paid will cause your bills to be put on the customer's 'must be paid' list.

## Decision Further Clarifies Resale Price Problem

A decision which still further clarifies the subject of how far a manufacturer may legally go in the fixing of resale prices has recently been handed down by the Circuit Court of Appeals in Chicago in the so-called Cream of Wheat price maintenance case.

The company was restrained from continuing certain alleged unfair methods of competition aimed at price maintenance, but it was also stated that nothing in the previous rulings of the Federal Trade Commission shall prevent the Cream of Wheat Company from:

(1) Requesting its customers not to resell Cream of Wheat at less than a stated minimum price.

(2) Refusing to sell to a customer because he resells below such requested price or because of other reasons.

(3) Informing itself, through its soliciting agents and through publicly circulated advertisements of customers which come to its attention, and through other legitimate means, as to the prices at which Cream of Wheat is being sold.



# Wiring Systems and Methods in the Southern Cotton Mills

By ARTHUR L. ABBOTT,  
Technical Director, A. E. I.

THROUGHOUT a large section of the Southern States cotton is the chief product of the soil, and the manufacture of cotton textile products is the chief industry. All the modern cotton mills and many of the older ones are electrically driven, individual motor drives for machines being used extensively.

Practice has become standardized along very well defined lines in the electrical equipment of these mills. The cost of the very best wiring is a small percentage of the total investment in a mill, and the mill owners very generally insist on the best, realizing the ultimate economy of an electrical installation which will insure continuous operation of the expensive mechanical equipment.

Comparatively few of our readers have more than a passing interest in a cotton mill as such, but there are many features of the wiring methods commonly used which are of interest to all construction men. It is not the purpose of this article, therefore, to present a treatise on cotton mill wiring, but rather to describe certain features of one installation as exemplifying a distinct type of industrial plant wiring.

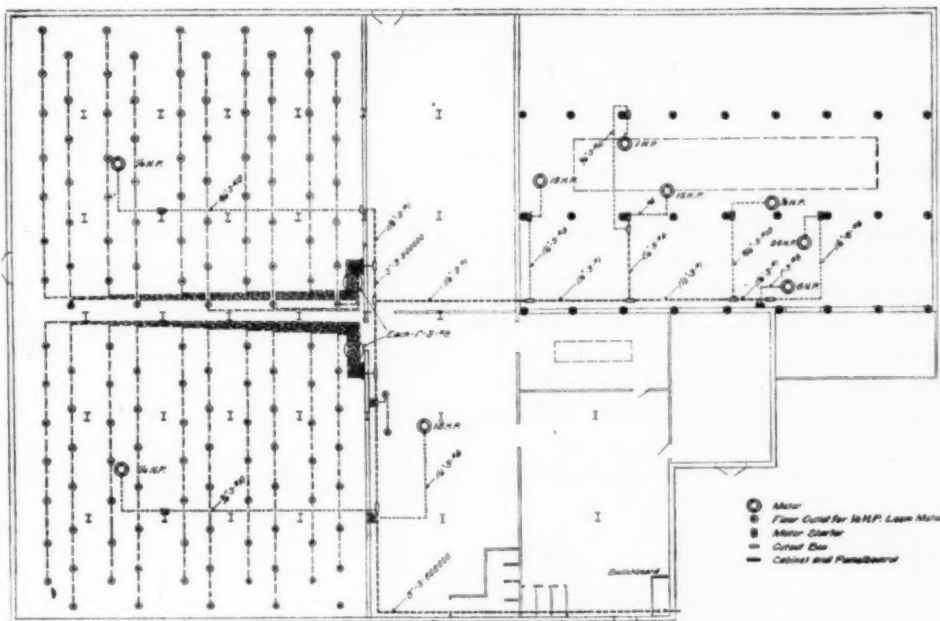


Fig. 1—Power Layout

The two accompanying plans show the lighting and power layouts in a portion of a mill which is a one-story structure, an older part having steel H-columns with steel beams, while a new addition has cast iron columns and wood beams. The southern mills are generally one, two or three stories in height, with exterior walls of brick and

wood floors of slow-burning construction.

Referring to the layout, the lighting system is seen to be of the conventional industrial plant type. The fixtures consist of R. L. M. reflectors and sockets hung on 1/2-in. conduit stems from ALC1 conduit fittings, the lamp-center height above the floor being approximately 14 ft. Nearly all lamps are 200 watt. The spacing is 10 ft. by 10 ft. in the slasher room and finishing room, 10 ft. by 12 ft. in the bleachery, and 10 ft. by 13 ft. in the weave room.

The lamps are controlled in groups by switches mounted on the columns. For controlling groups totaling 1,320 watts or less double-pole 20 amp. push switches are used, these being installed in type FS conduit fittings. Groups of over 1,320 watts total are controlled by 30 amp. 3-pole externally-operated safety type knife switches.

Starting from a 37 1/2 K. V. A. transformer on a concrete base outside the building a No. 4/0, 115-230 volt three-wire feeder is carried to the center line of the building and then along this line.

At convenient points the main feeder is run through cutout boxes and from these boxes sub-feeders are carried

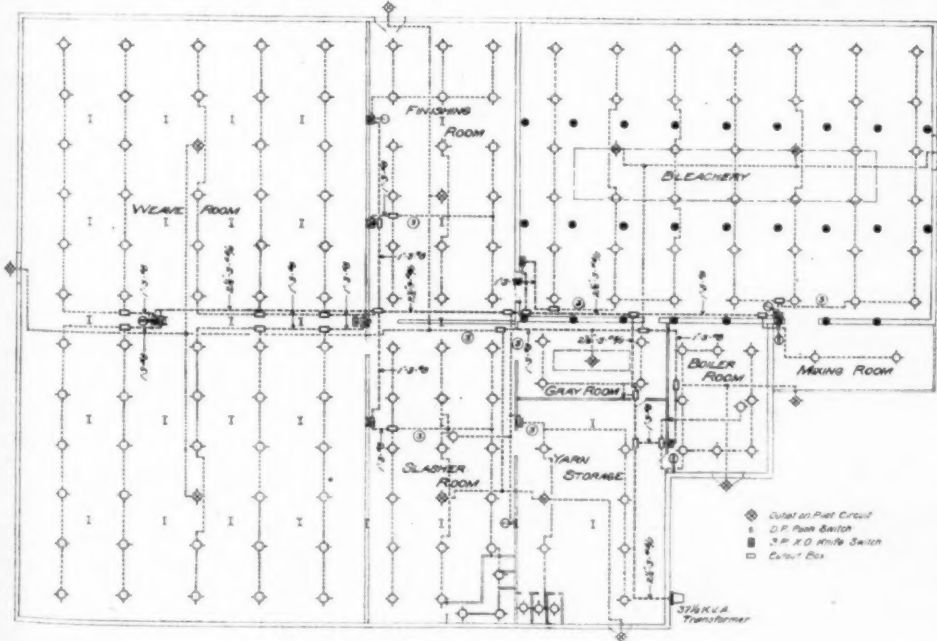


Fig. 2—Lighting Layout





TABLE IP-1—CONDUIT  
FEEDERS, MOTOR CIRCUITS AND LIGHTING CIRCUITS  
TIME IN HOURS

Size	Conduit per 100 ft.	Elbows Each	Terminals Each	Bends Each	Offsets Each
1/2	2.9	.4	.2	.08	.12
3/4	3.6	.5	.2	.09	.14
1	4.7	.8	.25	.2	.3
1 1/4	5.8	1.3	.4	.5	.9
1 1/2	6.0	1.5	.5	.6	.7
2	7.3	2.0	.6	1.0	1.5
2 1/2	9.3	3.0	1.0	1.0	2.3
3	12.4	3.9	1.3	2.7	
3 1/2	13.4	4.5	1.5	3.4	
4	14.4	5.2	1.8	4.1	

The above units include allowances for pipe straps secured with 2 wood screws each, 20 straps per 100' for 1/2", 3/4" and 1", 10 straps per 100' for larger sizes.

Add for each strap on brick wall—.2 Hr. For each strap on cast iron column—.45 hr. For flexible conduit connections to motors, allow for each length the same time as 1 terminal.

BORING HOLES FOR CONDUIT

Size Pipe	Size Hole	Hours—Hole Through Wood Beam or Spiking Strip	Hours—Hole Through 5" Wood Floor
1/2"	1"	.35	.07
3/4"	1 1/4"	.5	.10
1"	1 1/2"	.7	.15

TABLE IP-2—CONDULETS  
TIME IN HOURS EACH

Size	Number of Openings			
	1	2	3	4
1/2	.5	.65	.8	1.0
3/4	.5	.7	.9	1.1
1	.6	.8	1.1	1.3
1 1/4	.7	1.1	1.5	1.9
1 1/2	.8	1.3	1.8	2.3
2	.9	1.6		
2 1/2	1.3	2.3		
3	1.5	2.8		
3 1/2	1.7	3.2		
4	2.0	3.7		

The above units include pipe terminal labor, so that no additional allowance should be made for this item when a conduit terminates in a conduit.

TABLE IP-3—CABINETS, CUTOUT BOXES AND PULL BOXES  
TIME IN HOURS PER OPERATION

Operation	Size—Sq. Ft.			
	1	2	3	4
Mount—On Wood .....	.8	1.2	1.6	
Line with transite—				
Back and Door only .....	.5	.6	.7	
Back, Door and Sides .....	1.0	1.2	1.4	
Make Flat Iron Supports—per pair				
Straight .....	.7	.7	.7	
Bent to form brackets .....	1.1	1.1	1.1	

iron pedestal 3 in. high fits on the flange of the floor box and supports a 30 amp. three-pole snap switch with thermal cutouts, from which the leads to the motor are run in flexible steel conduit.

There are two panelboards in the weave room, from each of which 10 sub-feeders are run to supply 70 motors. A magnetically-operated switch is installed in the feeder to each panelboard, so that by means of control push buttons the 70 motors can be started or stopped together.

The usual practice is followed of using across-the-line type starters for squirrel-cage motors of five H. P. and less and compensators for the larger sizes. In this mill push button control is used throughout; the smaller motors are started by means of magnetic switches and the larger motors by automatic compensators. An externally-operated disconnecting switch is installed ahead of each magnetic switch and each compensator. The details of a typical switch and compensator mounting are shown in Fig. 6.

Cutout boxes are of ample size. Those containing cartridge fuse cutouts have a lining of 1/4-in. transite on the back and the inside of the door. Transite barriers are also mounted between 600 volt cutouts.

#### Grounding

Exceptional care is taken in grounding conduit and apparatus. The building is equipped with a sprinkler system, and each run of conduit must be grounded to a sprinkler pipe which is at least as large as the conduit. Bonds are installed around any gasketed joints in the sprinkler pipe. No dependence is placed on a locknut and bushing connection as a ground. Cabinets and cutout boxes must be bonded to the conduit with a ground wire bolted to the box and leading to a clamp on the conduit, and each run of conduit leading from a box must be either separately grounded to a sprinkler pipe, bonded to the box or to a grounded conduit. Wires for grounding conduit are No. 4 or larger.

The frames of looms on which motors are mounted are grounded by means of 1/16-in. by 1/2-in. copper strips. The foot of the loom frame is drilled and tapped for a machine screw to secure one end of the strip and the other end is held under one of the screws securing the switch pedestal to the floor box. The strip lies flat on

the floor and is nailed down with shingle nails.

White conduit is used throughout except in the bleaching and finishing rooms, where the specifications call for enameled conduit painted with two coats of acid proof paint manufactured by the Truscon Laboratories or by the American Asphalt Company. The paint is applied before erection and any abrasion marks made by wrenches or vises are touched up after erection. The two coats of paint must be of different colors.

No bends or offsets are made in conduit if this can be avoided, elbows or condulets are used for right-angle turns, even in 1/2-in. and 3/4-in. sizes. No outlet boxes are used, all lighting outlets are conduit fittings.

In mills which are more than one story in height the floors are of three-ply wood construction, and it has in some cases been the practice to leave out one of the 3 1/2-in thick planks which form the lower layer of the floor, on the line on which the lighting outlets are located. This provides a "wire channel" over the beams through which the conduit can pass. When this is not done the wood beams, or the spiking strips on top of steel beams, must be bored to receive the conduit. All conduit larger than 3/4-in. is run on the side of wood beams, or if at right angles to the beams, is run under them and secured by pipe straps or beam clamps, with ring hangers at intermediate supports. Details of typical floor construction are shown in Fig. 4.

For the 550 volt power wiring, varnished cambric insulation is preferred for cables larger than No. 4/0 and often for smaller sizes as well. Rubber insulation on wires and cables for the power system is 30 percent Para compound.

#### Additional Data

On account of the peculiar character of this work it was found that some of the data contained in the A. E. I. Estimating Manual was not in convenient form for use in estimating the labor on these installations, also that some additional labor data was required before the estimating could be done.

Cost records of two cotton mill jobs were available. For the purpose of keeping these records the work on each job had been divided into a considerable number of sections, and a separate record was kept of the labor on each section.

In order to overcome the deficiencies found in the Manual special labor units were worked out by making use of the Manual data and other labor data which was on file, and taking advantage of an opportunity to consult freely with the contractor. These units were then tested by applying them to the operations included in each of the sections of the two actual installations. The units finally arrived at gave results checking very closely with the records of the actual labor.

#### Revision

This labor data is presented in the accompanying tables. It is quite possible that some revision may be found necessary after further studies have been made, but it is believed that labor estimates based on the data as it stands will be well within the ordinary limits of accuracy.

The utility of these tables is of course not limited to cotton mill work alone. The data may be applied to many other classes of industrial plant work where the conditions are similar or closely approach similarity.

We are indebted to J. E. Sirrene & Co., engineers, Greenville, S. C., for the use of the plans and specifications for this installation which are remarkably complete, clear and definite. We have also received much valuable assistance in the compilation of this information from the contractors, R. H. Bouligny & Co., Inc., of Charlotte, N. C.

TABLE IP-4—CUTOUTS

Time in hours each to mount in box with stove bolts and connect, but not including taps to mains. See table of labor on taps.

Type	Amperes					
	30	60	100	200	400	600
Single Pole .....	.35	.8	1.0	1.4	2.0	3.2
2 P. Main or S.B.....	.6	1.5	2.0	2.6		
3 P. Main or S.B.....	.75	2.1	3.0	3.9		
2 P. S.B.....	.75	2.1				
3/2 P. D.B.....	.90	2.5				
3/3 P. D.B.....	1.00	3.00				

TABLE IP-5—ERECTING MOTORS

Time each for erecting 3-phase 220 to 550 volt squirrel cage or slip ring motors, ceiling mounting. Includes erecting two double channel supports bolted to wood beams, mounting motor on supports and aligning motor. Data is based on 1,200 or 1,800 R. P. M. motors.

H. P.	Hours
1, 2 or 3	10
5 or 7½	15
10 or 15	20
20 or 25	25

TABLE IP-6—MISCELLANEOUS ITEMS

	Hours Each
Floor Box, 4" x 6" x 3½" set in wood floor over tar concrete, for connection to loom motor switch .....	.5
30 amp. 3 P. Motor Starting Switch for loom motor, mounted on cast iron pedestal, including connection at switch, but no connections at motor.....	1.0
½" x 1½" Copper Ground Strap for grounding loom frame to switch pedestal, including drilling copper strap, drilling and tapping loom frame and installing strap .....	.6
Ground Clamps, including short connecting wire .....	.5
Making up on the job supports for mounting apparatus on cast iron columns, each complete support consisting of two U-bolts around column and two channels or angles:—	
Complete support for small X. O. switch or other light apparatus using ¾" U-bolts .....	2.0
Complete support for compensator or other heavy apparatus, using ½" U-bolts..	3.0
Lighting Fixture consisting of ½" conduit stem hung on ALC-1 Condulet. RLM reflector and socket—time to make up and install complete with lamp.....	.75
See Tables 1, 2 and 3, File 5, for labor data on X.O. switches and compensators. For switches to be mounted on round columns with U-bolt support use same time as for mounting on wood.	



# How Detroit Arrived at Its Red Seal Requirements

By H. SHAW

Manager Electrical Extension Bureau of Detroit

THE Red Seal specifications in Detroit territory are the result of the best efforts of a committee comprising residence contractors, fixture men, electrical estimators, engineers and central station representatives and the city chief electrical inspector.

This committee met no less than twenty-five times over a period of ten months and each meeting lasted for two hours or more. This was necessary because Detroit was one of the first cities in the United States to take on the Red Seal activity and therefore had no precedent to follow. Work on the Detroit specifications had been started months before the Society for Electrical Development had completed their plans for releasing the Plan

nationally. We in Detroit felt that the Red Seal was destined to be the greatest activity ever undertaken by the electrical industry or any other industry and that the specifications governing it should be thought out carefully from every possible angle. We still feel the same way about the Red Seal and results in this territory have justified our faith in the Plan. The Red Seal Plan has been in effect in Detroit approximately one year, practically no newspaper advertising has been done and we have today a large number of Red Seal homes with each month showing a very marked increase in the number of homes and interest on the part of speculative builders as well as home owners.

One of the first problems to be decided by our Red Seal specification committee was just what we expected the Red Seal to accomplish in Detroit. Was it to be an ideal installation serving

a few who build expensive homes or was it to be so designed that every home could be Red Seal? The committee decided on the latter and accordingly plans were made to fit the specifications to the average home. In doing this the Red Seal becomes a standard that all may enjoy whether they be working men

problem then was to determine just how many outlets were fundamentally necessary to provide reasonable adequacy in these homes and how to regulate the number per room in proportion to the room sizes. The "square foot area" idea was tried out and found impracticable for obvious reasons. The lineal

feet of wall space plan was adopted as the determining factor for the number of convenience outlets and side wall light outlets per room. The need of convenience and light outlets varies in certain rooms as it is agreed that a living room requires more convenience outlets than a bedroom even if they should both be the same size. So it became necessary to gather together a large number of floor plans and



A Whole Detroit Subdivision Has Red Seal Homes

or millionaires. Much has been said about grading the Red Seal to meet various priced homes. This has been vigorously opposed by the committee in Detroit and the writer is firmly convinced that the Red Seal requirements should embody the fundamental electrical outlets regardless of the price of the home. We believe these fundamentals are as necessary in a forty-five hundred dollar home as in a forty-five thousand dollar home. It must be borne in mind, that, generally speaking, the expensive homes are built "on order" under the supervision of an architect, while the large majority of homes are built for the masses by speculative builders who are badly in need of the Red Seal and the service that it carries with it.

Having definitely decided that the Red Seal requirements were to be applicable to all classes of homes the

study them as to possible furniture arrangement and probable electrical household devices that would be used now or at a later date by the occupant. This phase of the committee's work consumed many hours of careful thought and study. Every possible rearrangement of furniture in a given room was considered. The committee kept in mind the fact that while many home owners might have only three portable lamps to connect up in their particular living room these would periodically be moved from one part of the room to the other and that outlets would have to be provided to take care of any possible arrangement. In other words three convenience outlets seldom provide adequate convenience in a room for three portable electrical devices. This, of course, may happen in rare cases where there are only three places to set furniture. In such rare cases adequacy is

our rule rather than lineal feet.

From the study as above outlined it was determined that living rooms required a convenience outlet every twelve lineal feet including openings in order to provide reasonable convenience and flexibility and that to provide proper decorative lighting wall light outlets should be placed every fifteen lineal feet including openings. These wall lights are controlled by a wall switch. The living room fireplace is set off by outlets either on the mantel shelf or on either side of the mantle if no shelf is used. All living rooms must have a center ceiling outlet controlled by wall switch. If the main entrances to the room are more than ten feet apart, three point switches must be provided at each main entrance to control center fixture, thus avoiding the necessity of crossing a dark room to reach the switch. There has been, and still is, some opposition to the center ceiling outlet in the living room, but we believe that it is necessary to adequately illuminate the room.

#### Ceiling Lights

The dining room ceiling light outlet is controlled by a single wall switch unless the main entrances are ten feet or more apart in which case three point switches must be provided at the entrances. Wall brackets are essential for auxiliary lighting in the dining room and accordingly all dining rooms having fifty or more lineal feet of wall space, including openings, must have one bracket light for each twenty-five lineal feet, controlled by wall switch. The rearrangement of furniture is much less frequent in the dining room than in the living room and the number of portable devices less, so convenience outlets are required only every fifteen lineal feet. However, in order that electrical service may be conveniently brought to the dining table a floor plug is required in the floor under the table.

The kitchen is provided with one center light outlet controlled by wall switch and also one light (either side, wall or ceiling) over sink when adequate illumination cannot be provided by the center ceiling light alone. Whether the sink light is required or not depends on the size and shape of the kitchen and the position of the sink in relation to the center ceiling light. This is decided when the plans are laid out by the field man. Two single convenience outlets are required in the kitchen, one for the hand iron and one for appliances.

The necessity for a center ceiling light outlet in every room in the house is obvious and the bed rooms are not excepted. These bedroom center light outlets must be controlled by a wall switch located at the entrance to the room. Large bedrooms need auxiliary lighting to supplement that provided by the center outlet and therefore bedrooms having over fifty lineal feet of wall space including openings are required to have one wall light outlet for every twenty-five lineal feet. These are usually placed on either side of the logical dresser space near the clothes closet. Most bed rooms requiring side wall light outlets have a definite wall space near the clothes closet for a dressing table. The placement of brackets in bedrooms requires considerable study and is something that pays well in the appearance of the room if properly planned. This brings to mind the thought that the planning of outlet arrangement is as important, or nearly so, as the number of outlets. Our field work on new residence construction has brought to light, very forcibly, the fact that the irresponsible electrical contractor has absolutely no consideration for the builder or ultimate occupant when it comes to outlet arrangement. He places both switches and convenience outlets wherever they can be placed with the least possible amount of material or labor, regardless of their location from a convenience standpoint. Needless to say this type of contractor, whether he is a builder or electrical contractor, has no use for the Red Seal Plan. Why? Because he can't skimp the job, either in number or location of outlets.

#### Bathroom

To use the mirror in the bath room for the purpose for which it was intended, good lighting from any and all angles is essential. This is accomplished by a side wall light outlet at each side of the mirror controlled by a wall switch, and cannot be accomplished in any other way, so our Red Seal specifications require it. If the bath room is larger than seventy-two square feet area, a center light outlet and wall switch is also required because the brackets will not provide sufficient illumination. A convenience outlet is also required in bath rooms. Because of the ever increasing use of portable heaters in bath rooms the bath room lights and bath room convenience outlet are required to be on a separate

circuit of their own. City Rules do not require this but Red Seal does.

Sun rooms, dens and libraries need electrical convenience as much as most other rooms in the house. Here, as in all other rooms, center light outlets are required on conveniently located wall switches and convenience outlets are required for each fifteen lineal feet including openings.

In main halls a ceiling light outlet is required, controlled by a wall switch. If these outlets light stairways (except basement and unfinished attic) three-way and four-way switches are installed as required. In homes where there are rear stairways or where the third floor is occupied, four-way switches are necessary to convenience and therefore are required as above mentioned.

A switch conveniently located on the first floor controlling one or more lights in the basement for general illumination is required. One of these lights must illuminate the basement stairway. One light outlet is also required in front of furnace, in fruit room and in coal room. In the laundry one light outlet is required over laundry tubs and also a convenience outlet on ceiling near laundry tubs for the use of a washing machine. One convenience outlet is also required on laundry wall and this outlet must be on a separate circuit as many ironing machines use electrically heated elements.

#### Height of Outlets

As mentioned previously the location of all outlets is important and so under the caption "Location of Outlets," we require wall light outlets to be in general five feet eight inches above finished floor, and the height of switches to be four feet above finished floor. Convenience outlets must be in base board or not more than fourteen inches above it, except in the kitchen. There it must be forty-two inches above, and in the bath and breakfast room thirty-six inches above finished floor. The laundry ironing machine outlet must be forty-two inches above finished floor. The number and location of all outlets must be approved when roughed in and at completion by the Electrical Extension Bureau of Detroit. Before starting work the electrical contractor is to secure a permit from the local Electrical Inspection Department having jurisdiction and all work must be installed in accordance with the rules of said Inspection Department.



Under the caption "General" appear the following requirements which are mandatory, and in no way may they be violated:

*All switches are to be flush type.*

*When more than one switch come in the same location they are to be ganged under one plate.*

*Convenience outlets and plugs are to be flush standardized, interchangeable type.*

*Outlets must not be placed behind radiators or swing of doors.*

*Push buttons at front, rear and grade doors to operate bells or buzzers from current to be provided by low voltage transformer located on basement lighting circuit.*

*Illuminated house number to be placed on front of house.*

*All lighting outlets to be equipped with fixtures.*

*At least two spare circuits are to be provided in panel for future use.*

The wisdom of the above general requirements are evident and are decidedly important if the Red Seal plan is to stand for anything at all in the community in which it is operated.

#### "Alternates"

The bane of the electrical contractor's business is "alternates." "If you don't do this, you must do something else equal to it." We have this condition in the Code, City Rules and architects' specifications. As a consequence no two electrical contractors can agree on the interpretation of the rules and the electrical engineer who can outguess his competitor on just what is "equal," or will get by, gets the job for his firm. I once heard some inspectors discussing "when does a service cease to be a service and become a part of the mains?" They haven't all agreed yet and I heard the discussion about two years ago. With these thoughts in mind we planned to make the Red Seal specifications in Detroit as plain and concise as possible with all the alternates possible left out. We have been criticised because our Red Seal specifications, in the minds of some, are arbitrary. We believe we, in this industry, should know and do know what constitutes reasonable adequacy in electrical outlets for a residence and we also believe that most speculative builders and the general public don't know. Hence our definite specifications and requirements

which can easily be interpreted without favor to some at the expense of others.

The accompanying photograph shows twenty-five Red Seal jobs under construction. They have been built by Johnston-Brommell Corporation of Detroit, whose slogan is "Builders of Better Homes." When first approached on the Red Seal, Mr. Brommell was in favor of the plan, but Mr. Johnston said, "Well, you want to add about thirty dollars each to the cost of the wiring to make them Red Seal and besides that I will have to buy some additional fixtures, so I guess we won't make them Red Seal."

The writer was particularly interested in landing the twenty-five jobs, because they are all in one location and all in the same block, so I kept after these people and went out on the job and talked to Mr. Johnston and showed him the advantage of the Red Seal as a sales asset when the time would come that they wanted to sell these houses. I explained that if the thirty dollars per house was all he had in mind that he was overlooking the best part of the story which was that he could get one hundred dollars more on the sale price, if they were Red Seal houses. We got the jobs and now comes the most surprising part of this story. Mr. Johnston informed me last week that he had ordered the electrical contractor to put in some additional convenience outlets in some of the larger of these houses because he thought there were some nice places to put writing desks and bridge lamps that the owner might want to use.

#### A Good Investment

These twenty-five houses will all be equipped with electric ranges and most of them will be equipped with electrical refrigeration. Incidentally these jobs were wired by a local electragist and were in charge of Mr. Keck of the Superior Electric Company of Detroit.

Our Red Seal specifications have been the means of bringing about a better condition in the City Electrical Rules during the past year. This is an interesting point and will bear brief explanation. The former City Rules for residence wiring permitted 750 watts per circuit and each convenience outlet was rated at 220 watts. We have wattage per outlet rules in Detroit. This rule permitted only three convenience outlets on a circuit. This, of course, increased the number of circuits in adequately wired homes to an excessive

number and was unwarranted inasmuch as most convenience outlets do not draw 220 watts. Because it increased the circuits the speculative builder had the least number of convenience outlets possible to put in each job, in many cases only one convenience outlet in a living room. The result of this was that after the owner moved into one of these homes he was forced to buy a three or four-way attachment in order to use his electrical portables, etc., in these living rooms. In other words the owner had to re-wire the house with lamp cord or telephone wire after he bought what was supposed to be a modern home.

#### Change Made

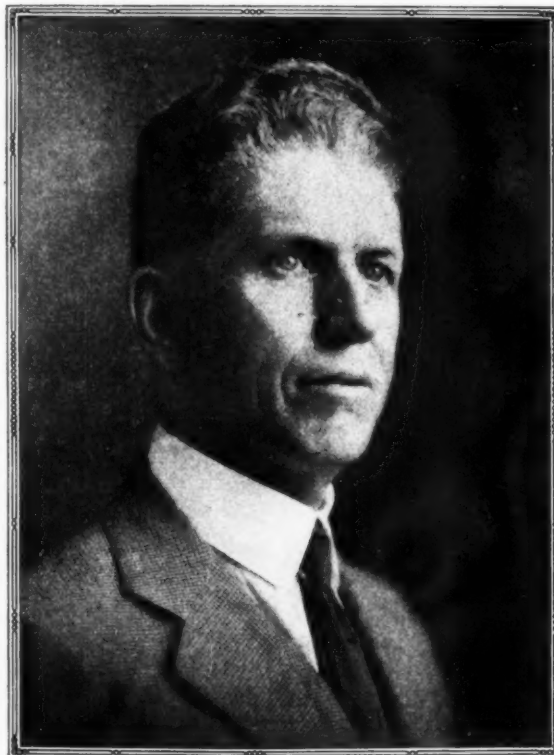
The Bureau called this condition to the attention of the Department of Building and Safety Engineering and a committee was appointed by this Bureau to work toward changing the rules. One of the members of this committee was Ben Clark, chief of the Electrical Bureau of the Department of Building and Safety Engineering. The commissioner of the Department, Frank W. Burton, was invited to attend several of these meetings and gladly accepted the invitation. When the condition pertaining to the use of telephone wire and lamp cord was explained to him he ordered the electrical inspectors to inspect two hundred and fifty occupied dwellings to verify our statements. These inspectors' reports showed that in two hundred of the two hundred and fifty homes inspected the home owners were using every kind of wire (with the possible exception of hay wire) strung around the rooms in order to use the portable lamps and other devices which they had. This was proof enough for the commissioner and accordingly the City Rules were changed as follows: Living rooms must have one convenience outlet for every fifteen lineal feet of wall space including openings with a minimum of two and all other rooms except bath rooms and kitchens must have one convenience outlet for every twenty lineal feet. The wattage for residence circuits was changed from 750 watts to 1,200 watts and the rating of convenience outlets was changed from 220 watts to 120 watts. These changes make it easy and reasonably inexpensive to do a fairly adequate job.

In conclusion let me say that Detroit has a live Association of Electragists who are heartily in accord with the Red Seal plan and who are wide awake to its possibilities as a sound business builder.



### Harry H. Walker, Los Angeles

**T**HOUGH Harry H. Walker was born in Olean, N. Y., in 1877, he has been in California long enough to qualify as a thirty-third degree native son, having made the transcontinental migration with his parents when he was eleven years old. His education was completed in Los Angeles and his first taste of the electrical business came in 1897 when he started as a wireman's helper with the Wybro-Lawrence Company. After rising to the position of general manager with this company, he left in 1900 to become general storekeeper for the Edison Electric Company, a pioneer central station organization. Four years later found him turning his back on California as Canadian sales manager for the Sprague Gas Meter Manufacturing Company, but the lure of the Golden State drew him back a year afterward and he became construction electrician for the Los Angeles Railway Company. By 1908 he had made several other shifts and was then employed as superintendent in charge of construction by the Richards-Newsteadt Construction Company and this position he held until he started his own business in 1913. The war came and Mr. Walker did his part as superintendent of electrical construction at Camp Kearney. After the armistice he returned to his business and immediately became thoroughly interested in association activities. Joining the Los Angeles Contractors and Dealers Association in 1920, he became its president in 1922 and served in that office until 1926. He has also represented the electrical contractors on the advisory board of the California Electrical Bureau since 1923. He was active in the formation of the California Electragists, was president in 1925 and is at present vice-president of the state organization and chairman of the Southern Division.



## Electragists You Should Know

### Louis Freund, New York City

**L**OUIS FREUND, like the well-known Topsy, seems to have grown up mainly through his own efforts and to have made a good job of it. Born in New York City in 1877, he was orphaned at the age of six and from then until he was seventeen an orphan asylum was his home. During this time he was studying the unusual combination of music and electrical engineering. In 1894 he went to work for the General Incandescent Arc Light Company at a salary of \$3.50 per week, the week consisting of sixty hours, somewhat in contrast to the five-day week now proposed by labor leaders. His early experience included time out for getting his fellow workmen's lunches. And then after the day at the factory had closed, he played in an orchestra at night in a desperate attempt to make both ends meet. This did not go on for long for subsequently he was given charge of the stock room and then was advanced to head of the arc lamp testing department. After that came appointments, respectively, as assistant to the superintendent and assistant to the general manager. In 1903 the arc light company was bought by the General Electric Company and Mr. Freund made up his mind he was going to get into a business nobody could buy without his consent. So he started an electrical contracting business and has remained in this field ever since. Starting out with small store work, he later became interested in new building work and then began specializing in wiring for the needle industry. He has been a member of the Independent Associated Electrical Contractor-Dealers of Greater New York for many years and served a term as its president. He is much interested in philanthropic work and of late has devoted much time to it.



# Chats on the National Electrical Code

*A Monthly Discussion of Wiring Practice and Questions of Interpretation,  
Presented with a View Toward Encouraging a Better Understanding of the In-  
dustry's Most Important Set of Rules*

By J. C. FORSYTH

Supervising Engineer, Bureau of Electricity, N. Y. Board of Fire Underwriters

## No. 20 Fixture Wire

There is at present, and has been for some years, a demand for recognition in the Code of No. 20 B. & S. fixture wire. The matter has been repeatedly considered by various committees, but has not been accepted. An action recently taken by the Underwriters' Laboratories' Council approving a cord smaller than No. 18 B. & S. gauge for a special service may prove to be an entering wedge. The objections against the use of No. 20 gauge wire for fixtures have been:

"1—Less mechanical strength in the wires and therefore more liability of breakage and a greater probability of the conductors being "stretched" under strain, thus still further decreasing their cross sectional area and carrying capacity.

"2—The rules now recognize as satisfactory the protection of flexible cords and No. 16 and No. 18 fixture wires by 15-amp. fuses and to accept No. 20 wire in fixtures it might be necessary to require 6 or 10-amp. fuses in branch circuits; otherwise adequate protection for these lighter conductors would not be secured.

"3—The necessity for No. 20 fixture wire is to be found only in connection with fixtures of "delicate" design or where inadequate raceways have been provided through fixture arms. To allow the use generally of the No. 20 wire would lead to its being employed in fixtures where no legitimate reason could be shown and thereby still further decrease the very small factor of safety at present secured by standard practice."

These arguments appear to be well taken and present a rather strong case against any change in present methods, but on the other hand there is something to be said in favor of the proposition as follows:

"1—Imported fixtures of special de-

sign are found to be wired with No. 20 and even with No. 22 wire. This seems to be a well accepted practice in England, France and Germany. To rewire these fixtures with No. 18 standard wire is not only very difficult, but often impossible.

"2—No. 20 wire can be drawn into arms of small fixtures with much less friction than the larger wire and would therefore be less likely to be abraded or stretched, and after installation would be in better condition.

"3—There is a legitimate use for No. 20 wire in fixtures of artistic design and to prohibit its use is to hinder the development of these high class types which are in common use abroad and often imported to this country and installed.

"4—A short circuit or ground developing in a fixture wired with No. 20 wire will draw sufficient current to operate a 15-amp. fuse as quickly as on a No. 18 wire and in case of an improper fuse would melt and open the circuit more quickly than if the larger wire is installed."

Might it not be possible to accept No. 20 wire in arms of special fixtures and restrict its use so that it would not be employed where sufficient space to install the larger wires is available?

## Fixture Wire

The first clause of Rule 604A reads as follows: "Fixtures shall be wired with approved flexible cord or approved rubber covered wire." There is considerable misunderstanding among contractors and fixture manufacturers as to the material actually required by this rule. There is no flexible cord approved for fixture work that is not insulated and protected as follows:

1—A tight close wind of fine cotton over the stranded conductor.

2—A rubber jacket not less than 1/32-in. in thickness for sizes No. 16

or No. 18 and 3/64-in. for No. 14 or No. 8.

3—A braid of cotton or silk over each conductor.

These conductors may then be twisted together and used for fixture wiring or they may be carried parallel to each other and enclosed by an outer covering of cotton or silk. Rubber covered wires for fixture work may be either solid or stranded. If solid the conductor must be "tinned." If stranded it must be covered with a tight close wind of fine cotton. For No. 18 the rubber insulation must be not less than 1/64-in. in thickness and not less than 1/32-in. for No. 16. These conductors must then be protected by braid of cotton or silk or other approved material sufficiently tenacious to withstand abrasion when being pulled into fixtures. In other words, stranded or solid fixture wire having 1/64-in. rubber insulation is a special product and is entirely different from the ordinary flexible cord. It is made for fixture wiring only and should be used for no other purpose.

Old Code flexible cord having only 1/64-in. rubber is not approved for fixture work and should not be used.

## Loft Buildings

Under date of January 1, 1925, the Department of Water Supply, Gas and Electricity and the New York Board of Fire Underwriters issued a "Bulletin" to electrical contractors reading as follows:

"Please be advised that on and after January 1, 1925, the installation of 'open work' for surface wiring in 'Loft' buildings will not be approved. This will require that on and after that date all wiring on ceilings or side walls must be installed in approved metal enclosures, such as wiremould, metal moulding, armored cable or conduit."

This has been objected to by some as



being discriminatory and causing a more expensive character of work than is required in other types of occupancy. This action was taken as a result of reports from reinspections of all classes of buildings and occupancies and which indicated conclusively that the open type of wiring was much more generally abused in loft buildings than in other places. Wires became loosened from cleats and knobs; were used as supports for merchandise; were taped and spliced and mistreated in every conceivable manner. The requirement above mentioned has resulted in a more permanent, better appearing and safer type of work and we believe fully justifies the enforcement of this rule.

#### Electric Meters

The installation of meters by private meter corporations is one of the most vexing problems with which we have to deal. They do not seem to have any settled policy of operation, but differ widely in their installation practices. Suitable provision for sub-metering is seldom made even in buildings now under construction, while in buildings already erected, and particularly in the older ones, there is great difficulty in connecting to the existing risers and circuit wiring in anything like a workmanlike or safe manner. Nearly all loft buildings have one or perhaps two sets of risers with panelboards and containing cabinets recessed in the wall. From these cabinets the circuit wiring is carried in conduit concealed in the walls and ceilings.

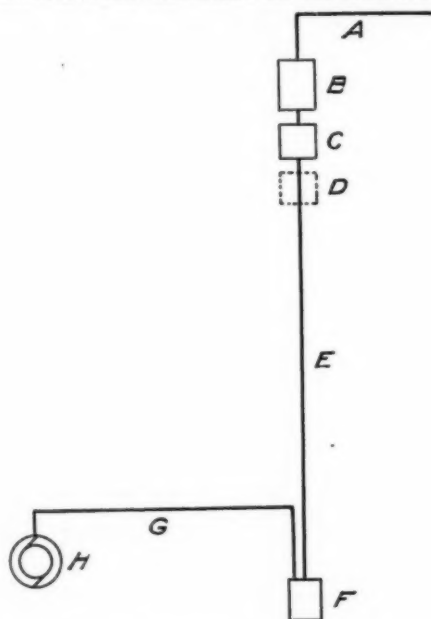
These lofts were originally intended for single occupancy and without individual meters for each floor. It is found that large numbers of such buildings are being subdivided to accommodate anywhere from two to a dozen separate tenants and each tenant is required to pay for his own current. This necessitates a separate meter for each and the sub-meter companies are attempting to utilize the existing panelboards by taping to the riser and extending the circuit to meter and cutout locations. In some cases the cutout and meter is fifteen to twenty feet away from the panelboard.

To bring out the necessary number of meter taps and pick up on the panel the circuit or circuits leading to the part of the floor occupied by the tenant is practically impossible if at the same time it is desired to comply with the

Code. Contractors are in the habit of leaving the connections at the panelboard to the meter company and demand their certificates as soon as meter loop is installed. This practice can no longer be recognized and in future the wiring and all connections must be complete, leaving nothing further to be done except to install the meter and the proper fuses. The only satisfactory method to follow in such cases it seems to me would be to remove the original panel and substitute a panel that is designed for the proper number of meters, with fuses to protect both the meter taps and the circuits leading from the cabinet.

#### Duplicate Fuses

Rule 806-b reads as follows: "When the service fuses are locked or sealed or are located at the outer end of the service conduit duplicate main fuses or branch fuses connected on the load side



- A. Service Conduit, three No. 1 r. c. wires.
- B. Main switch and 100-amp. fuses in cabinet sealed by power company.
- C. Power Meter.
- D. Cabinet and fuses called for by the inspection department.
- E. Conduit from meter to motor switch cabinet, No. 1 wire forty-two inches in length.
- F. Motor starter switch and fuses of 70-amp. capacity.
- G. Conduit to motor; length of conduit run, 21 inches; No. 1 wire throughout.
- H. Twenty h. p. motor.

#### Diagram showing how additional fuses may be inserted at the meter

of the meter and enclosed in an approved casing or cabinet so as to be readily accessible to the occupant of the building shall be provided."

An inspection department has recently ruled that additional fuses must be inserted at the meter and on the load

side of the meter where a single motor was supplied from a service. The following sketches will indicate the general arrangement, the dotted lines showing where the additional fuses were required to be installed.

From a casual reading of the rule the inspector would seem to be justified in his position. On examining the rule carefully, however, it can be seen that the committee in drawing up the rule had in mind only two things:

1—To allow the power company full authority to seal the service switch and fuses to prevent theft of current.

2—To provide for the ready replacement of main fuses by the customer in case of trouble.

In the case before us the fuses at the motor would provide accessibility to the main fuses and would, therefore, comply with the spirit and intent of the rule. In the writer's opinion the installation of additional fuses at the meter is unnecessary and would only add to the cost of the equipment without affording any additional protection.

#### Omission of Outlet Box

I have received the following inquiry: "In a concealed knob and tube wiring installation a surface mounted snap switch is mounted directly on the plaster, 7/8-in. blocks having been provided back of the lath to support the switch as per Rule 1205a. The wires are brought through the lath and plaster in loom directly to the switch. Is this installation in accordance with the Code requirements? If so, is not the Code inconsistent in permitting the omission of an outlet box in this case and requiring outlet boxes or plates at all outlets, as per Rule 502h?"

There is no doubt whatever but that Rule 1205a of the Code approves the placing of a surface mounted snap switch on a wall in the manner described. If this outlet were to be used for a bracket fixture or in fact for any device other than a surface mounted switch an outlet box would be required by Rule 502h. Why was this exception made and why should not a box be provided? This would seem to be a case where Article 5 Committee and Article 12 Committee failed to compare the various sections; and thus we have one of those "conflicts" in the Code that is often hard to explain and difficult of application.



# Red Seal



# Progress

**A**FTER eighteen months of operation of the Red Seal plan, according to an announcement of the Society for Electrical Development, past progress and the outlook for the immediate future may be considered entirely satisfactory.

In a resume, dated October 6, 1926, the S. E. D. states that there are thirty-four Class A licenses and that, with the inclusion of the entire states of California and Rhode Island, the total number of leagues operating the plan is seventy, as compared to eleven at this time in 1925. In addition five applications for license are in progress.

The important cities operating the plan are listed below.

Red Seal is operating in communities of 500 population or over to the

## Important Cities Operating Red Seal Plan

Albany	Grand Rapids	Niagara Falls	San Diego, Cal.
Atlanta	La Crosse, Wisc.	Oakland, Cal.	San Francisco
Buffalo	Louisville	Peoria	Saratoga
Chattanooga	Los Angeles	Pawtucket, R. I.	Savannah
Chicago	Kansas City	Pittsburgh	Schenectady
Columbia, S. C.	Memphis	Poughkeepsie	Syracuse
Davenport	Milwaukee	Providence, R. I.	Toledo
Denver	Minneapolis	Rochester	Tulsa, Okla.
Detroit	Moline	Rock Island, Ill.	Youngstown, O.
Elmira	Muncie	St. Paul	

Plan is in operation over the entire states of California and Rhode Island.

number of 847, with a total population reached of 16,000,000. The number of homes which had received Red Seal certificates up to September 1 was 1,830 and this number was expected to be increased greatly with the completion of a number of real estate developments in various parts of the country, where all homes are being wired Red Seal by speculative builders.

A point of interest brought out by the survey is that 95 percent of the homes wired for Red Seal are of the single dwelling type and 5 percent are of the multiple dwelling and apartment house type.

Statistics on the amount of publicity accorded the Red Seal in the past twelve months are as follows:

Pieces Red Seal promotional and operating material distributed...	265,000
Total pages of articles published dealing with the Red Seal:	
In electrical trade publications..	140
In non-electrical trade publications .....	16
In house organs of electrical manufacturers and central stations.	15
Red Seal advertisements and reading column copy in local newspapers:	
Number of newspapers.....	112
Total column inches.....	51,000
Through the 1926 American Homes Bureau Supplement to 102 newspapers, Red Seal information reached a circulation of.....	2,750,000
Number of Red Seal outdoor illuminated billboards (8 x 24 ft. or larger) .....	15

Another disclosure is that actual Red Seal installations all over the country are running from 8 percent to 35 percent better than Red Seal requirements. Inasmuch as Red Seal requirements

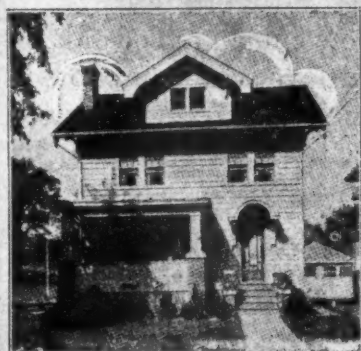
average 35 percent better than the usual housewiring job, the figures indicate that for every 100 outlets which go in under ordinary conditions, the Red Seal is getting in from 145 to 180 outlets.

## Local Red Seal News

Fifteen percent of the August building permits in Rochester, N. Y., were for Red Seal homes, which is a result very definite and encouraging to the operators of the plan there. At a recent date, fifty-eight builders were using the Red Seal plan, twenty-nine electrical contractors had wired two or more Red Seal houses, and the average Red Seal job there was showing an increase over the ordinary house of 14 light outlets, 9 switches and 14 convenience outlets, a total increase of 37 outlets or 100 percent over the average residence.

According to the figures compiled by the league there, Rochester's standing nationally, in Red Seal houses proportionate to population, is second only to Atlanta and in number of Red Seal houses obtained in the last three months, proportionate to population, it is at the head of the list.

The Hudson Valley Electrical League is hoping to have 125 Red Seal homes completed before the first of the year. At present 66 homes have been awarded the certificate and 56 houses have been pledged for Red Seal wiring, making a total of 122.



## Building For Service

Electricity and service are synonymous in the modern home—where Red Seal wiring affords the best use of electricity for many household tasks.

The home pictured above is one of many Red Seal homes built by Victor Haggblom of Poughkeepsie. It conforms to the specifications of the National Red Seal Plan.

Adequate outlets in every room to enable the modern servant in the house—ELECTRICITY—to serve you is the purpose of the Red Seal Plan.

If you are building or buying a home, you will want Red Seal wiring. Our league will tell you how to secure Red Seal installation in the home you build. Local real estate dealers will help you in the purchase of a Red Seal Home.

The Symbol of Adequate Wiring  
Copyright 1924 S.E.D.



The Electrical League  
of Poughkeepsie

52 Market St. Phone 700

A Sample of Poughkeepsie's New Red Seal Advertising

# *The Electragist*

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

H. H. STINSON  
Associate Editor

## **President Fowler's Trip**

A journey of eight thousand miles visiting twelve western and northwestern cities afforded us an opportunity to make an interesting study of trade relationships.

Respect for our branch of the industry as a factor in the present and future growth of the electrical business was everywhere apparent. The measure of activity in a community is in proportion to the contractor's conception of his responsibility.

Electrical contracting is a successful enterprise where business methods comprising accounting, estimating and salesmanship are given intelligent consideration.

Somewhat the same complaints are heard from our members in almost every locality:

Ruthless and ignorant competition.

Irresponsible persons encouraged to enter the business.

Merchandising policy of Central Stations.

Supply Jobbers without trade policies.

As we journeyed from place to place we were impressed with the remarkable character of our members, so many of whom, in the presence of such obstacles, have become exceedingly prosperous. Substantial store buildings, beautifully appointed homes, expensive cars and good stocks of paid-for merchandise were not infrequently found in the possession of Electragists. Possibly the obstacles are blessings in disguise; we are taught that adversity makes men strong.

Where well organized local contractors' associations exist the obstacles are least pronounced. In such places a better understanding seems to prevail, not only among the contractors themselves, but with relation to the jobbers and central stations as well. In such

groups constructive study is given to proper accounting practice, accredited methods of estimating, the importance of credits and collections, educational work among architects and engineers and an active support to industry marketing programs, such as industrial lighting campaigns, Red Seal wiring, and quality standards in installation requirements.

Successful local associations avoid all attempt toward price fixing or distribution of jobs as not only illegal but un-economic, and such an attitude cannot be too strongly commended. It is interesting to observe that the most useful of these organizations have full time managers who command good salaries.

These impressions are a confirmation of the conclusions of our Executive Committee, as indicated by their action taken at Cedar Point, instructing the staff to develop a closer contact between the International Headquarters and the membership by encouraging the formation of local associations under a well thought out plan of procedure.

JOSEPH A. FOWLER, President,  
Association of Electragists, Int.

## **The Wiring Conference**

As we review from the distance of two weeks the Industry Conference on the influences that have retarded wiring progress, we are confident that the final results of the meeting will be to point the electrical industry toward the greatest progress it has ever known.

The conference was successful in its preliminary meeting in being able to go over with great freedom the several alleged causes of unsatisfactory wiring conditions. The members of the conference left the meeting determined to search out further facts and it will naturally take some time to mold an industry policy so far-reaching and important as this.

At the preliminary conference the facts presented made it apparent that the position of the Association of Electra-



gists in favor of quality wiring and workmanship, which position had been attacked by the National Electric Light Association, would ultimately prevail.

Somewhat the same situation has had to be met by other building industries and wherever the problem has been met successfully, it will be found, the industry has been a unit in regard to its policy.

When the electrical industry as a whole talks to the public only of quality, efficiency and adequacy of installations and electrical service the increase in wiring which we are seeking will come and a greater use of electrical appliances and energy will result.

This conference has enlisted the aid of some of the most foresighted men in the four branches of the industry, which alone is assurance that the decision of the Conference, upon the completion of the present investigation, will again put the electrical world upon the main line of wiring progress.

### Outlets as Xmas Presents

With everyone agreeing that nearly all residence installations are sadly deficient in the matter of outlets, it is to the advantage of the contractor to attack from every possible avenue of approach the problem of selling the homeowner these needed outlets. This thought and the onrushing Christmas season seem like proper running mates.

For years the public has seen the slogan, "Make This an Electrical Christmas." So far this has extended only to the merchandising of lamps, toasters, percolators and other appliances, but there is no reason why it shouldn't include wiring. The most expensive and beautiful percolator will never deliver a single cup of coffee if there isn't an outlet convenient for its use, and it would seem vital either to sell the outlet first or the outlet and the appliance together.

Christmas offers boundless chances for good advertising copy on wiring outlets. It is an unusual sort of home where the wife hasn't been wanting a couple of additional outlets in the living room, others in the dining room, the kitchen, the bedroom, the laundry, the attic. And the average husband needs only the special urge of the holiday season together with a slight push from proper advertising to have them put in for his helpmeet.

There are some difficulties in the way of this plan. If the average contractor were to get a hundred or even fifty of these extension jobs in the few weeks before Christmas, he could not finish them in time for Christmas Day. Furthermore, the housewife would not want her home torn up just before or during the holidays. And, last, the "Don't open before Christmas" spirit prevails in most families—they like to make all their gifts as surprises on Christmas morning.

However, a merchandise certificate, contracting to do the work at the owner's convenience, would eliminate the time-

element objections to the plan and, printed in Yuletide colors, would also make one of the nicest of tangible gifts.

### The Next Step

The Underwriters' Laboratories have announced their rules of procedure in acting upon applications for review and classification of appliances, devices, materials and methods used in the installation of electric wiring within buildings. This is an important step towards definite and orderly consideration of new materials and methods and will doubtless be followed shortly by equally well-defined rules of procedure in the Electrical Committee to make effective the Laboratories procedure.

Today the National Electrical Code is an American Standard through its approval by the American Engineering Standards Committee. The standards of the Underwriters' Laboratories in the classification of materials and methods of wiring enter largely into the development of the Code.

The next step should be the securing of American Engineering Standards Committee approval of the Underwriters' Laboratories standards. When this is accomplished the whole process by which our Code is built will be an American Standard and its position as a "national" electrical code still further strengthened.

### Electragist Standards

This past month the Association of Electragists through its Electragist Standards Committee began the work which will result in definite and carefully balanced recommendations as to the best wiring methods and materials for all classes of building. The discussions of the committee showed one thing clearly: Preparation of the standards needed will be a long and complex process, but one that will produce results of inestimable value.

In setting up the machinery for preparing the Electragist Standards the committee has followed the procedure of other engineering bodies for developing standards. At the head, necessarily, is the main standards committee itself, which will act as originator of procedure and agenda, and which will pass upon the final form of each standard developed. Secondly, there is the technical staff of the Association to work out the actual details of the standards under the direction of the main committee. And, last, there is to be a large technical advisory sub-committee, to consist of one man in each important city or locality, who will report local opinions, criticisms and suggestions as the standards are developed.

In this way the Electragist Standards for Wiring Installations which are finally brought out will represent the best wiring experience and engineering knowledge of electragists throughout the United States and Canada.

It looks like a big job and it will be a big job, but when these standards are finally released they will be a help, not alone to the electragist, but to the architect and the builder—the help that they have long been wanting.



## Association of Electragists INTERNATIONAL

**PRESIDENT,** Joseph A. Fowler  
118 Monroe Ave., Memphis, Tenn.

**SECRETARY AND TREASURER,** Laurence W. Davis,  
15 West 37th Street, New York City

### EXECUTIVE COMMITTEEMEN

**Eastern Division**  
A. C. Brueckmann  
314 Keyser Bldg.,  
Baltimore, Md.

**Mountain Division**  
E. C. Headrick,  
87 Broadway,  
Denver, Colorado

**Southern Division**  
J. A. Fowler,  
118 Monroe Avenue,  
Memphis, Tenn.

**Eastern Canadian Division**  
R. A. L. Gray,  
85 York Street,  
Toronto, Ont.

**Great Lakes Division**  
L. E. Mayer,  
14 No. Franklin Street,  
Chicago, Ill.

**Western Canadian Division**  
J. H. Schumacher,  
187 Portage Avenue,  
Winnipeg, Man.

**Central Division**  
A. Penn Denton,  
512 South West Blvd.,  
Kansas City, Mo.

**Open Shop Section**  
J. F. Buchanan,  
1904 Sansom Street,  
Philadelphia

**Pacific Division**  
C. L. Chamblin  
687 Mission Street  
San Francisco, Calif.

**Union Shop Section**  
W. Creighton Peet  
70 East 45th St.,  
New York City

#### AT LARGE

G. E. Shepherd,  
11 West Market Street,  
Wilkes-Barre, Pa.

### COMMITTEE CHAIRMEN

**Architects and Engineers**  
L. E. Mayer,  
14 No. Franklin St., Chicago, Ill.

**Membership**  
C. L. Chamblin  
687 Mission St., San Francisco, Calif.

**Code**  
A. Penn Denton,  
512 So. W. Blvd., Kansas City, Mo.

**Publication**  
L. K. Comstock  
21 East 40th St., New York City

**Conventions and Meetings**  
Joseph A. Fowler  
118 Monroe Ave., Memphis, Tenn.

**Radio**  
E. C. Headrick  
87 Broadway, Denver, Colo.

**Cost Data**  
J. H. Schumacher  
187 Portage Ave., Winnipeg, Man.

**Red Seal**  
C. L. Chamblin  
687 Mission St., San Francisco, Calif.

**Credit and Accounting**  
J. F. Buchanan  
1904 Sansom St., Philadelphia, Pa.

**Standardization**  
L. E. Mayer  
14 No. Franklin St., Chicago, Ill.

**Electragists' Data Book**  
J. H. Schumacher  
187 Portage Ave., Winnipeg, Man.

**Trade Policy**  
(Covering Manufacturers, Central  
Stations, Jobbers and  
Merchandising)

**Legislation**  
G. E. Shepherd  
11 W. Market St., Wilkes-Barre, Pa.

**U. S. Chamber of Commerce**  
W. Creighton Peet  
70 E. 45th St., New York City

**International Relations**  
R. A. L. Gray  
85 York St., Toronto, Can.

**Wiring Methods**  
G. E. Shepherd  
11 W. Market St., Wilkes-Barre, Pa.

**Liability Insurance**  
Joseph A. Fowler  
118 Monroe Ave., Memphis, Tenn.

### Past Presidents of the National Electrical Contractors' Association

Charles L. Eidlitz .....1901-1903  
E. McCleary .....1903-1905  
James R. Strong .....1905-1908  
Gerry M. Sanbern .....1908-1910

\*Marshall L. Barnes .....1910-1912  
Ernest Freeman .....1912-1914  
\*Deceased

John R. Galloway .....1914-1916  
Robley S. Stearnes .....1916-1918  
W. Creighton Peet .....1918-1920  
James R. Strong .....1920-1925

### CHAIRMEN AND SECRETARIES OF STATE ORGANIZATIONS

State	Chairman	Secretary
<b>British Columbia:</b>	C. H. E. Williams 509 Richards St., Vancouver	J. C. Reston 579 Howe St., Vancouver
<b>Alabama:</b>	J. R. Wilcox 2017 First Ave. Birmingham	D. B. Clayton Am. Trust Bldg., Birmingham
<b>Arkansas:</b>	Ed. Appler 901 Central Ave., Hot Springs	Clem Dresse 316 Louisiana St., Little Rock
<b>California:</b>	C. L. Chamblin 687 Mission St. San Francisco	Northern Division Edward Martin 182 Fifth St., San Francisco Southern Division C. J. Geisbush 610 Cotton Exchange Bldg., Los Angeles
<b>Colorado-Wyoming:</b>	Matt Whitney Colorado Springs	P. Harry Byrne 965 Madison St., Denver
<b>Florida:</b>	Preston Ayers Orlando	Charles E. James Fort Pierce
<b>Illinois:</b>	Joseph R. Downs 209 Federman Bldg. Peoria	L. B. Van Nuys 238 S. Jefferson Ave., Peoria
<b>Indiana:</b>	George H. Smith 115 S. College Ave., Bloomington	Ralph Brassie Lafayette
<b>Iowa:</b>	E. A. Arzt 211 Fifth St., Sioux City	C. M. Smiley 808 Central Ave., Ft. Dodge
<b>Kansas:</b>	L. M. Atkinson 116 E. First St., Pittsburg	Charles Dalrymple Wichita

State	Chairman	Secretary
<b>Louisiana:</b>	Robley S. Stearnes 624 Carondelet St., New Orleans	I. G. Marks 323 Chartres Street, New Orleans
<b>Maryland:</b>	A. C. Brueckmann Keyser Bldg., Baltimore, Md.	W. D. Young Calvert & Franklin Sts. Baltimore
<b>Michigan:</b>	W. F. Fowler c-o Barker-Fowler Electric Co., Lansing	E. P. Blackman c-o Motor Shop Battle Creek
<b>Missouri:</b>	Charles J. Sutter 1227 Pine St., St. Louis	W. F. Gerstner 120 North 2nd Street, St. Louis
<b>Mississippi:</b>	R. E. Beard Jackson	E. E. Armstrong Gulphort
<b>New Jersey:</b>	Henry M. Desaix Paterson	Robert Beller Newark
<b>New York:</b>	A. Lincoln Bush New York City	H. F. Janick 235 Berlin St., Rochester
<b>North Carolina:</b>	H. R. Bouligny Charlotte	W. P. Christian Greensboro
<b>Ohio:</b>	C. L. Wall Akron	O. A. Robins 1242 Oak St., Columbus
<b>Pennsylvania:</b>	W. V. Pangborne 1927 W. Montgomery Ave., Philadelphia	M. G. Sellers 1202 Locust St., Philadelphia
<b>South Dakota:</b>	Mark J. Hurlbut Chamberlain	Frank Shuff Yankton
<b>Tennessee:</b>	J. G. Cason 303 W. Church St. Knoxville, Tenn.	J. A. Fowler 118 Monroe Ave., Memphis
<b>Texas:</b>	T. L. Farmer 1809 Main St., Dallas	J. W. Read 715 Capitol Ave., Houston
<b>Wisconsin:</b>	L. W. Burch 202 E. Wash'n Ave., Madison	

# List of Local Associations

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS
<b>ALABAMA</b>			<b>NEBRASKA</b>		
Birmingham (C) .....	J. R. Wilcox	2017 First Avenue	Lincoln (L) .....	George Ludden	1329 N Street
<b>ARKANSAS</b>			Omaha (C) .....	E. H. Brown	1818 1/2 Harney Street
Fort Smith (C) .....	Edward Ryan	Ft. Smith Lt. & Trac. Co.	<b>NEW JERSEY</b>		
<b>CALIFORNIA</b>			Long Branch (C) .....	Austin Hurley	Campbell Ave., Long Branch
Fresno (C) .....	Clyde L. Smith	1162 Broadway	(Asbury Park and Red Bank)	Paul H. Jaehnig	435 Orange Street
Long Beach (L) .....	V. Ringle	So. Cal. Edison Co.	Newark (C) .....	R. Marshall	106 Academy St.
Los Angeles (C) .....	Helen I. Mikesell	1009 1/2 S. Hill St.	Paterson (C) .....		
Oakland (C) .....	Laurence R. Chilcote	Hobart & Webster Sts.	Philipsburg (See Lehigh Valley, Pa.)		
Pasadena (C) .....	H. W. Barnes	1331 N. Lake Ave.	<b>NEW YORK</b>		
Sacramento .....	L. W. Sherman	910 Ninth Street	Buffalo (L) .....	W. E. Prosser	87 W. Tupper St.
San Francisco (C) .....	E. E. Browne	522 Call Building	Brooklyn (C) .....	H. F. Walcott	60 Third Avenue
Beverly Hills (C) .....	H. Barker	Beverly Hills	Jamestown (C) .....	Henry M. Lund	309 Main Street
Santa Ana (C) .....	O. W. Robertson	303 N. Main St.	Nassau-Suffolk (C) .....	Henry T. Hobby	55 Front Street, Rockville Centre, L. I.
Eureka (C) .....	J. H. Hilfiker	1717 H Street	<b>NEW YORK City</b>		
<b>COLORADO</b>			Section No. 1 (C) .....	M. J. Levy	70 East 45th Street
Colorado Springs (C) .....	Matt Whitney	208 N. Tejon St.	Independent (C) .....	Albert A. Tuna	127 East 34th Street
Denver (C) .....	E. C. Headrick	89 Broadway	Metropolitan (C) .....	George W. Neil	96 Beekman St.
Pueblo (C) .....	E. F. Stone	So. Colorado Power Co.	Niagara Falls (C) .....	E. M. King	515 Niagara Street
<b>CONNECTICUT</b>			Rochester (C) .....	Theo. T. Benz	278 State Street
Hartford (C) .....	A. A. Angello	473 Park Street	Schenectady (C) .....	Richard Spengler	421 McClellan Street
Waterbury (C) .....	D. B. Neth	107 West Main Street	Syracuse (C) .....	Fred P. Edinger	802 East Water St.
Bridgeport (C) .....	L. E. Finch	529 Newfield Bldg.	Utica (C) .....	W. C. Ballda	228 Genesee Street
<b>DIST. OF COLUMBIA</b>			Westchester Co. (C) .....	Jack Lalley	14 Mnr. Hse. Sq., Yonkers
Washington (L) .....	P. A. Davis	1328 Eye S., N. W.	Yonkers (C) .....	Louis Mayer	485 South Broadway
<b>FLORIDA</b>			<b>OHIO</b>		
Bradentown (C) .....	W. S. Stewart	W. & S. Elec. Co.	Akron (C) .....	E. C. Rishel	540 East Avenue
Broward Co. (C) .....	Frank Swain	Orlando	Canton (C) .....	H. S. Hastings	301 New Vickery Bldg.
Daytona Beach (C) .....	C. Leotah Benson	324 1/2 S. Beach St.	Cincinnati (C) .....	J. F. Riehle	1642 Cedar Ave.
Deland (C) .....	C. W. Allcorn	132 No. Florida Street	Cleveland (C) .....	T. J. Manahan	Chester Twelfth Bldg.
Fort Myers (C) .....	P. K. Weatherly	Thompson-Weatherly Elec. Co.	Columbus (L) .....	O. A. Robins	1242 Oak Street
Indian Riv. Dist. (C) .....	I. O. Page	Vero Beach	Toledo (C) .....	Fred C. Dunn	Builders Exchange
Jacksonville (C) .....	W. A. Harper	22 Laura St.	Dayton (C) .....	Clarence Carey	1107 South Brown St.
Miami (C) .....	E. A. Robinson	118 N. W. First Ave.	Marion (C) .....	O. H. Cornwell	461 W. Center Street
Orlando (C) .....	D. E. Anderson	Ayers Electric Co.	Massillon (C) .....	F. D. Mossop	c-o Mesco Electric Co.
Palm Beach (C) .....	James W. West		Northern Ohio (C) .....	R. A. Wentz	Elyria
St. Petersburg (C) .....	Gardiner Blackman		<b>OKLAHOMA</b>		
Tampa (C) .....	P. F. Lyons	P. O. Box 992	Pawhuska	C. G. Sego	Pawhuska
<b>GEORGIA</b>			<b>OREGON</b>		
Atlanta (C) .....	B. K. Laney	73 Walton St.	Portland (C) .....	J. R. Tomlinson	51 Union Ave. N.
Savannah (L) .....	Sylvan M. Byck	Byck Electric Co.	<b>PENNSYLVANIA</b>		
<b>ILLINOIS</b>			Altoona (C) .....	Walter Bracken	Leechburg
Chicago			Allegheny Valley .....	E. G. Jackson	12 West Thurg Street
Electrical Contractors' Association	J. W. Collins	160 No. LaSalle St.	Chester (C) .....	W. H. McMillan	12 E. Long Avenue
Master Elec. Contractors' Association	F. J. Boyle	304 S. Halsted St.	Du Bois (C) .....	C. E. Blakeslee	11th and French Sts.
Decatur (C) .....	Earl Weatherford	114 East William St.	Erie (C) .....	R. D. Goff	1605 N. 3rd Street
Granite City (C) .....	M. E. Kilpatrick	Nildingham & State Sts.	Harrisburg (C) .....	W. W. Weaver	Main and Market Sts., Bethlehem
Peoria (C) .....	L. B. Van Nuy	238 So. Jefferson St.	Lehigh Valley (C) .....	A. W. Hill	1202 Locust Street
Rockford (C) .....	Donald Johnson	106 North Second St.	Philadelphia (C) .....	M. G. Sellers	1404 Commonwealth Bld.
Springfield (C) .....	A. D. Birnbaum	916 West Cook St.	Pittsburgh (C) .....	Fred Rebele	25 No. Main Street
Wheaton (C) .....	E. C. Krage	133 West Front St.	Wilkes-Barre (L) .....	Ambrose Saricks	
<b>INDIANA</b>			<b>RHODE ISLAND</b>		
Gary (C) .....	A. B. Harris	570 W. Washington St.	Providence (C) .....	H. E. Batman	36 Exchange Place
Indianapolis (L) .....	A. W. Kruege	2405 East 10th St.	<b>SOUTH CAROLINA</b>		
Michigan City (C) .....	Walter A. Sassodeck	913 Franklin St.	Charleston (L) .....	J. P. Connolly	141 Meeting Street
Muncie (C) .....	Harry McCullough	113 W. Howard St.	<b>SOUTH DAKOTA</b>		
South Bend (C) .....	R. A. Frink	1338 Howard St.	Sioux Falls	H. W. Claus	326 S. Phillips Ave.
Terre Haute (C) .....	C. N. Chess	523 Ohio Street	<b>TENNESSEE</b>		
<b>IOWA</b>			Chattanooga (L) .....	P. W. Curtis	725 Walnut Street
Cedar Rapids (C) .....	H. E. Neff	94 1st Ave., West	Knoxville (L) .....	Jerry G. Cason	303 West Church St.
Davenport (C) .....	Louis F. Cory	510 Brady Street	Memphis (L) .....	J. J. Brennan	12-16 So. Second St.
Fort Dodge (C) .....	J. A. Paul	16 South 12th Street	Nashville (C) .....	J. T. Shannon	c-o Electric Equip. Co.
Sioux City (C) .....	E. A. Arst	211 Fifth Street	<b>TEXAS</b>		
Waterloo (C) .....	R. A. Cole	Cole Bros. Elec. Co.	Beaumont (C) .....	J. A. Solleder	Houston & Bolivar Sta.
<b>KANSAS</b>			Dallas (C) .....	P. B. Seastrunk	2032 Commerce St.
Salina (C) .....	C. G. Loomis	814 Cedar St.	Houston (C) .....	J. W. Read	715 Capitol Avenue
Wichita (C) .....	P. W. Agrelus	Wichita	<b>UTAH</b>		
<b>KENTUCKY</b>			Ogden	B. Kristofferson	2249 Washington Ave.
Lexington (C) .....	J. H. Brock	235 East Main St.	Salt Lake City (C) .....	C. Louis Collins	215 Kearns Bldg.
Louisville (C) .....	C. L. W. Daubert	921 South Third St.	<b>VIRGINIA</b>		
Paducah (L) .....	K. H. Knapp	c-o Paducah Electric Co.	Lynchburg (C) .....	J. L. Fennell	c-o Fennell & App
<b>LOUISIANA</b>			Norfolk (L) .....	A. W. Cornick	200 Plum St.
New Orleans (C) .....	I. G. Marks	406 Mar. Bk. Bldg.	Richmond (C) .....	E. M. Andrews	15 N. 12th Street
Shreveport (C) .....	R. L. Norton	620 Marshal Street	<b>WASHINGTON</b>		
<b>MARYLAND</b>			Seattle (L) .....	P. L. Hoadley	Seaboard Building
Baltimore (C) .....	W. D. Young	Calvert & Franklin Sts.	Spokane (C) .....	William Stack	W. 1121 Cleveland St.
<b>MASSACHUSETTS</b>			<b>WEST VIRGINIA</b>		
Lowell (C) .....	George A. Ryan	79 Middle St.	Wheeling	Peter J. Erb	1414 Eoff St.
Haverhill (C) .....	H. W. Porter	14 West Street	<b>WISCONSIN</b>		
Malden (Medford, Everett and Melrose) (C) .....	H. J. Walton	c-o Malden Electric Co.	Green Bay (C) .....	V. E. Grebel	531 S. Broadway
Springfield (C) .....	A. R. Tullock	11-12 Court House Place	Madison (C) .....	L. A. Ring	2017 Winnebago St.
Worcester (L) .....	John W. Coghlin	239 Main Street	Milwaukee (C) .....	R. H. Grobe	1604 Wells Street
<b>MICHIGAN</b>			Racine (C) .....	Jos. J. Small	1910 Linden Ave.
Detroit (C) .....	N. J. Biddle	112 Madison Ave.	<b>CANADA</b>		
Grand Rapids (C) .....	T. J. Haven	1118 Wealthy St., S.E.	Montreal (C) .....	George C. L. Brassart	674 Girouard Ave.
Kalamazoo .....	E. R. Hummel	1121 Seminary St.	Toronto (C) .....	M. McRay	24 Adelaide St., N.E.
Saginaw (C) .....	E. T. Eastman	209 Brewers Arcade	Vancouver (C) .....	J. C. Reston	579 Howe St.
<b>MINNESOTA</b>			Winnipeg (C) .....	Fred Ball	300 Princess St.
Duluth (L) .....	Morris Braden	c-o Minn. Power & Light Co.			
<b>MISSOURI</b>					
Minneapolis (C) .....	W. I. Gray	209 Globe Building			
<b>MISSOURI</b>					
Kansas City (C) .....	A. S. Morgan	4 E. Forty-third St.			
St. Louis	W. F. Gerstner	120 No. Second St.			
Electragists' Ass'n (C) .....	G. L. Gamp	Wainwright Bldg.			
Electric Employers' Association (C) .....					

(C) designates exclusively Contractor-Dealer organization.

(L) designates an Electrical League



# OCTOBER ACTIVITIES

## President Fowler's Trip Promotes Better Relations Between Electragists and Other Branches of Industry

**On Flying Trip to Fourteen Cities He Discusses Before Gatherings Representative of All Branches of Industry the Aims of A. E. I. and Need for Coordination of Efforts of Entire Industry**

WHEN Joseph A. Fowler, president of the Association of Electragists, International, stepped off the train in New York City on October 15, he had completed a swing around the circle which, according to impartial observers, had been one of the greatest steps ever taken toward promoting good relations between electragists and the three other branches of the industry. In the course of his trip, on which he was accompanied by Mrs. Fowler, he visited fourteen cities and in each addressed one or more gatherings of electrical men, representing local cross sections of the industry. In each, also, he held conferences with local electragists on how local, state and national associations might best work together.

### Response Enthusiastic

Lack of space forbids giving all the details of Mr. Fowler's trip, but his report indicated that electragists everywhere are swinging into line with the aims of the A. E. I.; and letters from members everywhere he visited indicate that his presence and his talks on the aims of the A. E. I. have convinced central stations, jobbers and manufacturers that the contractors indubitably have a place in the picture.

His first stop was at Kansas City, which he reached on Wednesday morning, September 22. At a joint luncheon of the Kansas City Electrical League and the Kansas City Chamber of Commerce, he made his initial talk of the trip, speaking in the interest of the radio and electrical show then being put on by Kansas City and treating also of the progress made by the A. E. I. and of its present aims, the keynote he was to preserve during the remainder of his trip. This was followed by a meeting with local contractors at which was discussed methods of tying in local and national work.

The next morning found him in Denver and upon his arrival he was interviewed by a representative of the Denver Post. This resulted in a first-page story in that newspaper on the value of unity of effort among electrical men, forming some of the best general publicity so far obtained by the A. E. I. Later came a conference with about fifteen local electragists and a dinner meeting in the Hall of Colorado of the Hotel Cosmopolitan at which all branches were represented. This was presided over by P. Harry Byrne, president of the local association, and Mr. Fowler was introduced by A. C. Cornell, chairman of the Electrical League of Colorado.

From Denver he went to Colorado Springs, being met there by Matt Whitney, president of the Colorado-Wyoming Electrical Contractor-Dealers' Association. There was held a dinner attended by a number of electrical men and this turned into a round-table discussion of national and local work.

### Cross Sections

Salt Lake City was the next stop, Mr. Fowler arriving there on September 27. Both Mr. and Mrs. Fowler were guests at a luncheon tendered them by fifteen leaders in all branches of the industry and Mr. Fowler in the evening addressed another "cross section" meeting. This was followed by a conference of electragists.

In Los Angeles, where Mr. and Mrs. Fowler were house-guests of Harry H. Walker, 1925 president of the California Electragists, they took a sight-seeing trip and then left the following morning for Del Monte, where the California state convention was being held. Mr. Fowler made a talk of one hour and twenty minutes at the convention, which aroused the greatest enthusiasm. Regarding this, C. J. Geisbush, executive secretary of the South-

ern Division of the California association, writes as follows:

"My vocabulary fails me when I attempt to put down on paper all the wonderful things accomplished by President Fowler during his brief stay in California. The jobbers have an entirely different slant on the electragists' activities nationally; the central station representatives are willing to concede that maybe we do have a place in the picture; our West Coast manufacturers are taking a new interest in our Trade Policy; and these, together with the wonderful effect President Fowler had on the California membership, are just a few of the many things which could be said regarding his stay here."

### Coordination

From Del Monte Mr. and Mrs. Fowler drove to San Francisco with Clyde L. Chamblin, newly-elected president of the California Electragists, and on October 4 Mr. Fowler spoke at the regular monthly luncheon meeting of the San Francisco Development League, at which there was an attendance of two hundred. He later attended an electragists conference and took part in a round-table discussion of local and state problems and the coordination of national and local activities.

An unusual note was added to his trip in Portland, where on October 6 he attended an evening conference of inspectors where there was discussed some proposed revisions in the Oregon state electrical code. Following this he was a guest at a dinner attended by about seventy-five men representing the four branches of the industry.

The following night he spoke at a like meeting in Seattle, leaving there immediately afterward for the overnight boat trip to Vancouver. His visit in the latter city was the busiest of his entire trip. Starting with a short conference of local electragists, he went on to a meeting at 10 a. m. with the officials of the British Columbia Electric Company, the central station. This was followed at eleven by a meeting with representatives of local jobbers and at 12:15 by a meeting of the Electric Club. Then at 4:30 p. m. came



a general meeting of all groups and at 6:30 a dinner attended by members of the four branches.

In Winnipeg Mr. Fowler attended an Electric League luncheon, at which were present the Mayor and a number of other city officials. After addressing this gathering he attended an informal meetings of about twenty electragists.

The following day found him in Minneapolis, where he was the guest of honor at a meeting of contractors.

Throughout the trip local electragists arranged sight-seeing tours for both the president and his wife, and in addition Mrs. Fowler was entertained by the wives of members at each stop. Both Mr. and Mrs. Fowler expressed themselves enthusiastically about the courtesies that were extended them from the time they left New York until their return.

### Plan for National Lighting Show

A national lighting fixture exhibition is to be held in Cleveland, O., from January 31 to February 4, according to the announcement of The Artistic Lighting Equipment Association.

### Eastern Inspectors Hold Second Meeting

Excellent progress in the formation of local chapters was reported at the second meeting of The Eastern Association of Electrical Inspectors, held in New York, October 13 and 14. This association, which was formed last February as the outgrowth of the former Western New England Association of Electrical Inspectors has the Atlantic seaboard for its territory, and already there are chapters representing New York, Philadelphia and Western New England.

An address by Thomas H. Day of the New England Insurance Exchange dwelt on fifty years of electrical inspection. On Thursday inspection was discussed from the viewpoint of the electrical manufacturer by D. Hayes Murphy of Hartford, from the viewpoint of the electragist by Secretary Laurence W. Davis of the contractors' association, from that of the municipal inspector by N. J. Kelly of New York, of the underwriters' inspector by W. W. Vaughan of Syracuse, and of the public utility by A. P. Good of the Commonwealth Edison Company.

## Industry Wiring Conference Defines Issues

No Decision Reached on "All-Metal" Controversy, but Executive Committee Formed, Authorized to Collect Further Data and Report at Meeting to be Held at Later Date

THE first meeting of the Electrical Industry Conference on Wiring was held at the Engineers' Club, New York City, October 15, to consider the economic factors underlying the present controversy between the National Electric Light Association and the Association of Electragists, International, on the subject of the Electragists' All-Metal wiring standard and its effects on the expansion of house wiring business.

The issues before the Conference were:

1. Is the All-Metal wiring standard, as installed in practice, usually or normally more expensive than non-metallic wiring methods?
2. Does the All-Metal standard, be it more or less expensive, restrict or not restrict the market for wiring?

Statements were presented by the chairmen of the delegations representing the National Electric Light Association, the National Electrical Manufacturers' Association, the Electrical Supply Jobbers' Association and the Association of Electragists, International, followed by general discussion of the points brought out.

An executive committee was appointed comprising the four delegation chairmen and Earl E. Whitehorne, chairman of the Conference, to collect

and compile information and facts bearing on the issues as above defined. When this executive committee has its report ready a further meeting of the full conference membership will be called.

Present at the initial meeting of the Wiring Conference were:

Representing the central stations: W. H. Blood, Jr., Stone & Webster, Boston, Mass.; A. P. Good, Commonwealth Edison Company, Chicago, Ill., chairman wiring committee, N. E. L. A.; J. D. Noyes, engineer, Detroit Edison Company, Detroit, Mich.; Charles J. Russell, vice president, Philadelphia Electric Company, Philadelphia, Pa.

Representing the Manufacturers: H. R. Sargent, engineer, General Electric Company, Bridgeport, Conn.; R. C. Myer, Habirshaw Wire and Cable Company, (alternate for W. E. Barker, United States Rubber Company, New York); C. A. Bates, engineer, Bryant Electric Manufacturing Company, Bridgeport, Conn.; W. E. Sprackling, vice president, Tubular Woven Fabric Company, Pawtucket, R. I.

Representing the Jobbers: W. R. Herstein, vice president, Wesco Supply Company, Memphis, Tenn.; O. F. Rost, president, Newark Electrical Supply Company, Newark, N. J.; Martin Oberlander, representing G. A. Cullinan, vice president, Graybar Electric Company, New York; McKew Parr, president Parr Electric Company, (alternate



Members and Advisors of Industry Wiring Conference

for W. I. Bickford, Iron City Electric Company, Pittsburgh, Pa.)

Representing the Contractors: J. A. Fowler, president, Fowler Electric Company, Memphis, Tenn.; A. P. Denton, president, Denton Engineering Company, Kansas City, Mo.; W. C. Peet, president, Peet & Powers, Inc., New York; G. E. Shepherd, president, Shepherd-Rust Electric Company, Wilkes-Barre, Pa.

Technical Advisors: Joseph C. Forsyth, New York Board of Fire Underwriters, New York, technical adviser to the Conference on inspection; Alexander Maxwell, engineer, National Electric Light Association, technical adviser to National Electric Light Association delegation; H. B. Kirkland, Society for Electrical Development, technical adviser to National Electrical Manufacturers' Association delegation on wiring ordinance conditions; Laurence W. Davis, general manager, Association of Electragists, technical adviser to Association of Electragists, delegation.

## Del Monte Convention Makes History for California Electragists in Attendance and Accomplishments

Three-day Meeting, Attended by 250, Hears Progress Reports of Various Sections, Resolves Against State Water and Power Act and Lays Plans for Enlarging Association Activities

THE California Electragists, meeting for their annual convention at Del Monte on October 1, 2 and 3, set a mark for future state conventions to shoot at, both as regards attendance and activities. Approximately two hundred and fifty were in attendance, with the representation being about equally divided between electragists and industry guests. The guests included many central station executives, general managers of jobbing houses and district representatives of manufacturers. One of the outstanding results of the meeting was the determination to go on to greater state association accomplishments.

The report of the Merchandising Section stressed the importance of co-operation within the industry. It was recognized that merchandizing problems are of national scope and can only be solved by adoption of a definite policy by Central stations, manufacturers, jobbers and contractor-dealers.

## Tennessee Convention for November 12-13

The fifteenth annual convention of the Tennessee Association of Electragists will be held in Knoxville at the Whittle Springs Hotel, Friday and Saturday, November 12 and 13. Among the prominent speakers will be Earl E. Whitehorne, of *Electrical World*, whose subject will be "Industry Outlook;" A. L. Atkinson, of the General Electric Company, whose subject will be "Wiring Systems," and J. A. Fowler, president, Association of Electragists, International, whose subject will be: "Industry Contact."

The officers of the association for 1926 are: J. G. Cason, Knoxville, president; R. L. Clift, Memphis, first vice president; J. T. Shannon, Nashville, second vice president; W. A. Jewell, Chattanooga, third vice president; J. A. Fowler, Memphis, secretary-treasurer.

Officials expect the largest attendance in the history of the association.

C. J. Geisbush, executive secretary of the Southern Division, and proved of much interest, particularly to the jobbers present.

The address of Joseph A. Fowler, president of the A. E. I., was listened to carefully and at the end brought a great ovation for the speaker.

Clyde Chamblin, San Francisco, was elected president for the ensuing year and Harry H. Walker, president during 1925, was made vice-president.

## Rochester League to Have Contractor School

Announcement of a school for contractors which will cover the subjects of estimating, management and selling was the important result of a meeting of the Electrical League of Rochester, N. Y., on October 13, which was addressed by Laurence W. Davis, general manager of the A. E. I.

The meeting was devoted entirely, in plan and program, to the Contractor's Section.

Mr. Davis outlined the plan for a Contractor School, to begin in November, describing at length the work which will be covered under the three general heads: Estimating, Administration and Selling. The representatives of many contracting firms were prompt in their response to this plan, and 33 men enrolled.

The enrollment cost of this school has been placed at \$20, this figure being based on the basis of forty enrollments. It is believed, however, that the total enrollment will exceed these figures, in which case the cost of the course to each individual will be reduced.

## Pennsylvania Association Holds Fine Convention

The fourteenth annual convention of the Pennsylvania State Association of Electrical Contractors and Dealers, held at Philadelphia on October 4, 5 and 6, turned out to be the most successful ever held by the association, both in attendance and interesting program.

Addresses by Edwin Hulley, president of the Philadelphia Association, and W. V. Pangborne, president of the state association, opened the meeting. Mr. Pangborne said that never in the history of the electrical business have things been so promising. Much of his talk dealt with efforts to introduce into



the state legislature of a registration and licensing act and he urged that all members of the association support such an act.

Another address of signal importance came from E. M. Herr, president, Westinghouse Electric and Manufacturing Company, on the subject of cooperation in the industry. He advanced the thought that the need of the industry is new business.

"Taking business from each other on a competitive price," he said, "neither causes any real advance to be made in the electrical industry, nor does it help us individually.

"Is not, therefore, our most important problem to sell the electrical idea to the public, so that it will demand better wiring. We are all interested either in the production, sale, or installation of electrical appliances and better wiring. The field is enormous and constantly growing, and will tax the ability of all of us to properly take care of it.

"If we admit that the 'New and Better Business Campaign' or 'Selling the Electrical Idea to the Public' is our most important problem, the question at once arises—How can it be solved? Broadly, the answer is: By cooperative effort throughout the entire industry."

Other subjects on the program were: "Power Factor," discussed by Frank Gaswill; "Illumination," discussed by A. A. Brainerd; an address by Laurence W. Davis; "Estimating," discussed by Arthur L. Abbott; "Trade Policy," discussed by W. V. Pangborne.

Entertainment features were numerous, including theatre parties, a visit to the Sesqui-Centennial, a boat trip on the Delaware River and a banquet, entertainment and dance.

## First Meeting of Electragist Standards Committee Decides on Procedure and Agenda

Work to be Conducted, in Four Divisions, by Technical Staff under Direction of Main Committee and with Aid of Large Advisory Sub-Committee

THE general plan under which will be prepared the "Electragist Standards for Wiring Installations" was announced following an all-day meeting of the Special Committee of the Association of Electragists, International, held in New York on October 18.

The preliminary outline developed by this committee defines the scope and plans for the "Electragist Standards" as including the following divisions:

First: Adequacy of installations, involving the fundamentals of the engineering design of wiring systems.

Second: Definition of the types of material and apparatus required to meet various conditions of building construction, occupancy and service.

Third: Specifications for the materials and apparatus.

Fourth: Specifications for the methods of installing materials and apparatus.

It was decided to appoint a large technical advisory sub-committee, to consist of one man in every important city or community. Through this sub-committee the entire membership of the Association of Electragists will have an opportunity to contribute to the work of the main committee.

The members of the main committee include A. Penn Denton, Chairman, Kansas City, Mo.; W. Creighton Peet, New York City; Allan Coggeshall, New York City; George E. Shepherd, Wilkes-Barre, Pa.; A. C. Brueckmann, Baltimore; J. H. Schumacher, Winnipeg.

The first meeting of the committee was also attended by President Joseph A. Fowler, General Manager Laurence W. Davis and Arthur L. Abbott, Technical Director.

## Shepherd-Rust Observes 30th Anniversary

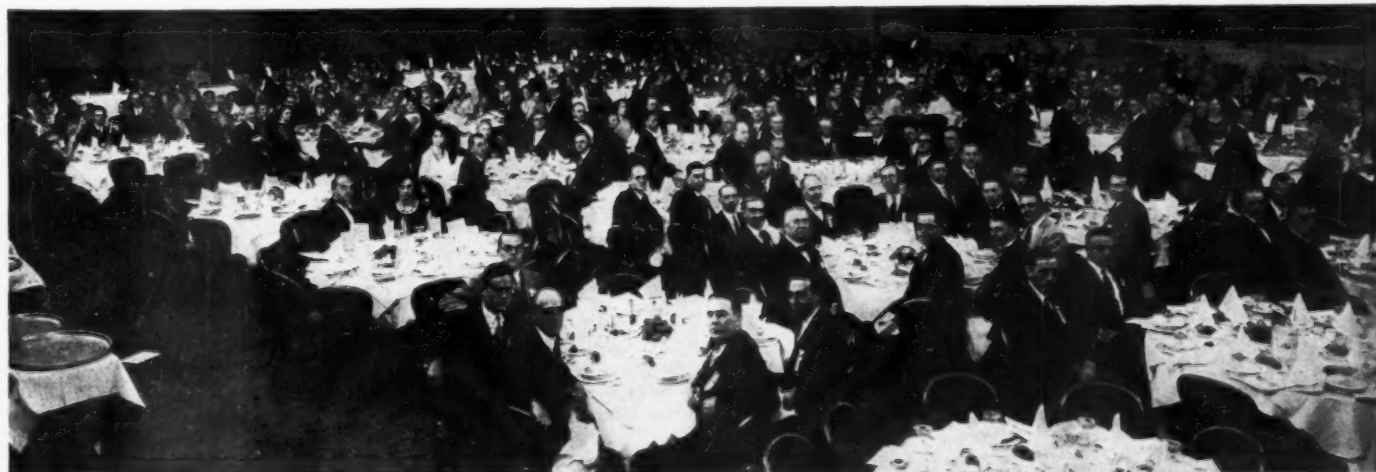
The thirtieth anniversary of the Shepherd-Rust Electric Company Wilkes-Barre, Pa., of which George E. Shepherd, A. E. I. executive committee-man, is president, was observed on October 12. In a full page newspaper announcement the company traced its progress from its first small store, opened in 1896, to the present establishment, occupying one of the largest buildings in Wilkes-Barre.

## New Haven Contractors to Meet

The Elm City Contractors' Association of New Haven, Conn., will hold their second annual banquet at the Hotel Garde, New Haven, Conn., on Thursday, November 4, at 7 p. m.

## January Meeting of Northwest Electrical Inspectors

It has been announced that the annual convention of the Northwest Association of Electrical Inspectors will be held on January 17 and 18, 1927, in the Multnomah Hotel, Portland, Ore.



Over 400 Persons Attended the Annual Banquet of the Pennsylvania State Association on October 6



## American Engineering Standards Committee Ballots on 1926 Code Changes with Executive Committee Suggesting Approval

Amended Text on Controversial Section 507 of N. E. C. Gains Almost Unanimous Approval of Electrical Committee, N. F. P. A., and 1926 Code Changes now on Road to Becoming American Standard

ONLY the formality of a letter ballot by the American Engineering Standards Committee, at the time of writing, stands between the 1926 changes in the National Electrical Code and their acceptance as an American Standard. That this is only a formality is indicated by the action of the A. E. S. C. executive committee in recommending that their approval be the result of the letter ballot sent out to the entire A. E. S. C. membership.

As predicted in the October issue of THE ELECTRAGIST, the amended text of Section 507 gained almost a unanimous vote in the letter ballot of the Electrical Committee, N. F. P. A.

Upon closing the letter ballot of the Electrical Committee regarding acceptance of substitute text for controversial Section 507, it was found that of thirty-nine voting members (including the chairman) thirty-six had voted affirmatively, two had refrained from voting and one had voted in the negative.

Pursuant to the instructions from the

executive office of the National Fire Protection Association, an amended application was filed with the A. E. S. C. asking approval of a 1926 Supplement to the 1926 Edition of the National Electrical Code with this new text for Section 507 substituted for that of the report of last spring.

The A. E. S. C. Executive Committee met on October 14 and authorized a letter ballot of the A. E. S. C. membership, recommending approval.

The National Board of Fire Underwriters, it is announced, will print an edition of the supplement in which the changes recommended will appear shortly following receipt of notice of favorable A. E. S. C. action.

### Walton Becomes A. C. E. Business Manager

Under a new plan of activities adopted by the Association of Certified Electricians of Northern Ohio, A. B. Walton, formerly secretary of the organization, will become business man-

ager and will devote his entire time to association activities. Also under this new plan, the A. C. E. will become more closely tied-in with the national association and will be known as the ACE chapter of the A. E. I. Mr. Walton recently spent several days in New York City, conferring with General Manager Davis and Technical Director Abbott of the A. E. I.

### Co-Operative Christmas Material

In an effort to assist the electrical retailer to sell more electrical goods as Christmas gifts, the Society for Electrical Development has made available:

1. Combination of window display panel and five cutout figures from a design by Tony Sarg.
2. An attractive window strip which can be used as a frieze around display windows or store interiors.
3. Seven counter cards suggesting various electrical appliances as Christmas gifts.
4. Electric home game, an educational good will souvenir which can be used in many ways.
5. A Santa Claus price tag, in holiday colors, to be used for pricing electrical goods.
6. Four feature stories to be run in the electrical news columns of local newspapers.
7. A special Christmas radio talk entitled, "Gift-Giving—A Lesson in Happiness."
8. Christmas booklet to be given away over the counter or sent to prospects by mail.
9. Holly wreaths in two sizes printed on both sides in two colors suitable to be hung in display windows or in the interior of the store.

## New Electragists

The following contractor-dealers have made application for membership and been accepted into the A. E. I. since the publication of the last list in the October issue:

### CALIFORNIA

#### Los Angeles:

H. C. Barnes  
Better Service Elec. Co.  
Windsor Elec. Co.

#### San Carlos:

H. D. Goetze

#### Santa Barbara:

Channel Elec. Co.  
Mission Elec. Co.

### FLORIDA

#### Orlando:

Davis-Kirk Elec. Co.

### INDIANA

#### Indianapolis:

H. M. Stradling

### LOUISIANA

### New Orleans:

Maritime Elec. Co., Inc.

### MARYLAND

#### Baltimore:

Shepherd-Fluharty Elec. Co.

### MICHIGAN

#### Detroit:

Advance Elec. Co.  
Thomas H. Moore  
Service Elec. Co.

### NEW YORK

#### Irvington:

Louis E. Stanke

### OHIO

#### Ashland:

Heter & Kirkpatrick

#### Bellevue:

R. W. Brown

### O. Calhoun

### Cleveland:

The Universal Elec. Co.

### Elyria:

The Dickason Elec. Co.  
Electric Service Co.  
The Elyria Superior Elec. Co.  
C. W. Pallas Elec. Co.

### Fremont:

Francis M. Dalton  
Electric Construction Co.  
Moore-Pero Co.  
Neuhausel Bros. Co.

### Lorain:

Burgett Elec. Co.  
Lorain Elec. Co.

### Sandusky:

The Beebe & Healy Co.  
The Hornig Elec. Co.  
Samuel Scott

### Toledo:

Thomas R. Meagher  
Overmeyer-Thatcher Co.  
The Electrical League of  
Toledo

### PENNSYLVANIA

#### York:

Geo. E. Motter's Sons

### TENNESSEE

#### Knoxville:

Power Equipment Co., Inc.

### WISCONSIN

#### Madison:

Blackhawk Elec. Co.  
Capital Elec. Co.  
Herman R. Cirves  
Harloff-Loprich Elec. Co.  
Schaub-Bradford Elec. Co.  
E. J. Vetter Elec. Co.

## Underwriters' Laboratories Adopt Application Procedure

A procedure for acting upon applications for review and classification of appliances, devices, materials and methods used in electrical installations has been adopted by the Underwriters' Laboratories, according to the announcement of A. R. Small, chairman of the Electrical Committee, N. F. P. A.

The procedure was worked out at the request of and in conference with the manufacturers' representatives of Underwriters' Laboratories and Electrical Manufacturers' Council.

Appliances, materials and methods submitted under this procedure fall into one of three groups with respect to their status under the installation regulations of the National Electrical Code, and the Standards of Underwriters' Laboratories, viz:

### Groups

Group 1. Appliances, materials, methods, etc., which are judged by the Laboratories to be not in conflict with the National Electrical Code and which are of a sort intended for uses similar to those of devices already listed.

Group 2. Appliances, materials, methods, etc., which are judged by the Laboratories to be not in conflict with the National Electrical Code and with respect to which there are no existing Standards or Laboratory Requirements, and no established Industry Conferences.

Group 3. Appliances, materials, methods, etc., which the Laboratories determine are in conflict with the National Electrical Code.

The procedure of the Laboratories with respect to applications determined by it to be either Group 1, Group 2, or Group 3, as above, will be as follows:

**Procedure Group 1.** When the review program of the appropriate Standard or Laboratory Requirements develops conformity therewith, the usual routine course of report to Underwriters' Laboratories' Electrical Council, listing with card report and follow-up service shall be taken.

When a conflict with the Standard is determined by the Laboratories and either the submitter or the Laboratories feel that the merits of the device or method justify recognition in the Standard, the matter shall be taken up with the established Industry Conference or at a conference with makers of devices for the same uses which are already listed, with a view to having the Standard so amended as to remove the conflict. In case such amendment is determined upon, the routine course shall be taken.

**Procedure Group 2.** Having determined that the device is of this group, the Laboratories shall prepare a program of review and tests which it considers essential and adequate. If the outcome of the application of the program is acceptable the Laboratories shall submit a report to its Electrical Council recommending appropriate card report, listing and follow-up service.

Subsequently, when several other submitors seek like action on devices intended for a like use, the Laboratories shall prepare an appropriate Standard, discussing its provisions with interested manufacturers in a meeting or through an Industry Conference, if one is organized. Thereafter, devices of this sort classify under Group 1 of this Procedure. At an appropriate time the manufacturers, singly or in a body, the Laboratories, or other interested party, may apply through regular channels for recognition of the class in the National Electrical Code.

**Procedure Group 3.** Having determined a conflict, the Laboratories shall so advise the submitter. Upon the latter's request the Laboratories may then undertake the preparation of a fact-finding report, first preparing a program of review and tests which it considers adequate and essential. The report shall treat of the general properties and features of the product and may—if judged proper by the Laboratories—include data as to comparative properties and features of well-known or established products. Such fact-finding report shall not include conclusions or recommendations by the Laboratories with respect to the merits or demerits of the product in connection with its projected use. The release of such report to the submitter assumes any desired use of it by him. If requested by the submitter, the Laboratories may advise the submitter orally relative to his applying for appropriate amendment of the National Electrical Code and as to the procedure in so doing.

### Article Committee

When such an application has been regularly referred to an Article Committee of the Electrical Committee (N. F. P. A.) and the Article Committee so requests, the Laboratories may advise the Article Committee of its views and opinions. If these advices are given other than orally or by a member of the staff of the Laboratories serving as a member of the Article Committee, (in other words—if they are as a formal report of the organization), they shall be transmitted only through the Chairman of the Electrical Committee for simultaneous delivery to the membership of the Article Committee and to the applicant. If judged necessary or advisable by the Laboratories' management, such reports, whether fact-finding or opinion reports to an Article Committee, may be submitted to the Electrical Council of Underwriters' Laboratories for ratification before release either to the submitter or to the Article Committee. Underwriters' Laboratories will make no other release of either a fact-finding or an opinion report while the subject remains in the category of this group. Provided a change is made in the National Electrical Code removing the conflict, the further procedure with respect to Group 3 becomes that of Group 1 or 2.

## OBITUARY

### James C. Galbraith

James C. Galbraith of the ReQua Electrical Supply Company, Inc., Rochester, N. Y., died at the Strong Memorial Hospital, in that city, on October 16, following an illness of several weeks. Mr. Galbraith had been with the ReQua Electrical Supply Company for six years.

## News Notes Concerning Contractor-Dealers

Harry P. Disbecker has formed the Disbecker Electric Appliance Corporation, 71 West Twenty-third Street, New York City.

S. J. Stewart, New Orleans, has purchased the stock and goodwill of the Wolf Electric Works, Inc.

Robert Kelley and James T. Gilbert have opened the Twilight Electric Shop at 1069 Castleton Avenue, West Brighton, Staten Island, N. Y.

The Standard Electric Construction Company, Inc., of which Robley S. Stearns, past president of the A. E. I., is the head, has taken larger quarters at 628 Carondelet Street, New Orleans.

**STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF "THE ELECTRAGIST," published monthly at Utica, N. Y., for October 1, 1926:**

State of New York, }  
County of New York, ss.:

Before me, a Notary Public in and for the State and County aforesaid, personally appeared S. B. Williams, who having been duly sworn according to law, deposes and says that he is the Editor of "THE ELECTRAGIST," and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Association of Electragists—International, 15 W. 37th Street, New York, N. Y.  
Editor, S. B. Williams, 15 W. 37th Street, New York, N. Y.

Managing Editor, none.  
Business Manager, Laurence W. Davis, 15 W. 37th Street, New York, N. Y.

2. That the owner is:

Association of Electragists—International. Not incorporated. Composed of 2,000 members, of which principal officers are:

Joseph A. Fowler, President, 118 Monroe Ave., Memphis, Tenn.

Laurence W. Davis, Secretary-Treasurer, 15 W. 37th Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent. or more of total amount of bonds, mortgages, or other securities are none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the Company, but also, in cases where the stockholder or security holder appears upon the books of the Company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signature of) S. B. WILLIAMS,  
Editor.

\* Sworn to and subscribed before me this 19th day of September, 1926.

MAY E. CASLIN.

(My commission expires March 30, 1928).

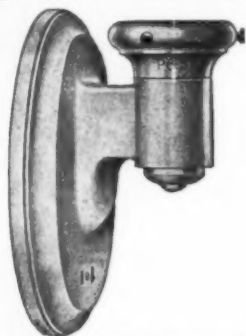


## News of the Manufacturers

### Bracket Type Receptacle

Pass & Seymour, Inc., Solvay, N. Y., are placing on the market a new bracket type receptacle with the standard convenience outlet. The receptacle is supplied in the pull and keyless types with porcelain shade holder and with porcelain ring.

The manufacturer claims an advantage because the porcelain shade holder and the por-



celain ring is made of the same high grade porcelain as the body of the receptacle and, therefore, can be relied upon to always maintain the same newness and color as the receptacle.

Another advantage claimed is ease of installing these bracket type receptacles on a Gem X type switch box and the majority of the surface boxes with the 3/4-inch opening.

### Crouse-Hinds Devices

Advance sheets on a number of items now being marketed by the Crouse-Hinds Company, Syracuse, N. Y., are being sent out. The devices include: Condulet bodies, black enamel finish, which take covers and C. E. tumbler switches; spring door attachments for threaded plug receptacle housings, black enamel finish; iron-clad rosettes, marine finish, 3-amp. 250-v., for condulets of the GS series; screw guards, vaporproof condulets, black enamel finish, furnished with recep-

tacle, sealing plate, caskets, globe and guard, and taking lamps from 60-w. Mazda B to 200-w. Mazda C; cushion fixture hangers, black enamel finish, for condulet bodies of the Obround series, furnished with 3/8-in. or 1/2-in. female nipple, cushion spring and screws; aisle light condulet, taking 10-w. S-14 Mazda B lamps, and furnished with lamp receptacle; ball fixture hanger; safety switch condulets; midget guard fixture; service entrance condulets; round plug for battery charging; adapters for condulet hubs, and condulets for grounding service wire and conduit system.

### Lighting Unit

A new semi-indirect unit specifically designed for the lighting of business offices is announced by the F. W. Wakefield Brass Company. The unit consists of a shallow ceiling plate, a column-like supporting stem, and a holder which carries enclosing glass-ware of carefully calculated contour and finish.

It has been realized by illuminating engineers that units commonly utilized for office lighting were designed for too broad a field. The new "Red Spot" unit has been rated by both the engineering department of the National Lamp Works and Edison Lamp Works of General Electric Company as "excellent" on such points as the appearance of the room, direct glare, reflected glare and shadows; as "very good" in the matter of facility of cleaning; and "good" as to illumination on vertical surfaces. It is particularly recommended for lighting school rooms.

### "Slick Finish" Loom

A new slick-finish loom is being made by the Wiremold Company, Hartford, Conn., which is designed to eliminate the cause for complaint of dust, when used for re-wiring and extension jobs in residences. The finish being smooth, there is no mica dust to float

over the furnishings and get into rugs, carpet and upholstery.

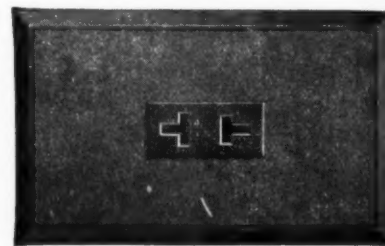
### Porcelain Socket Bodies

A complete line of interchangeable porcelain fittings is now being made by the Arrow Electric Company, Hartford, Conn., and circulars are being distributed showing how these fittings can be assembled to make ceiling units and wall brackets. Advantages claimed by the company for its new line are: The wide variety of units that can be made up from a few bodies and bases; the permanence of the finish; their suitability for mounting on stud boxes, outlet boxes and switch boxes.

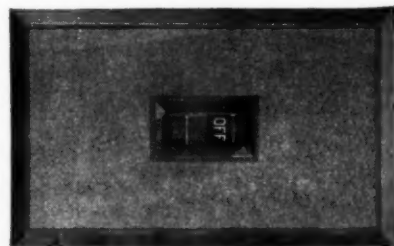
### Outlets and Switch Plates

Harvey Hubbell, Inc., Bridgeport, Conn., announce a new line of Hubbell rectangular outlets with Bakelite screwless plates.

This new design for wall outlets has been



developed without modifying the standard T-slot construction, and any form of bladed cap may be used with it. The screwless plate of Bakelite is snapped firmly into position by the pressure of one's fingers—no tools are required. When necessary it may be readily removed for the purpose of painting or papering, without disturbing the position of the switch. Another new Hubbell product is a switch plate, molded of Bakelite, without screws or any external fastenings to mar its finish.



The new plate is also snapped firmly into position by the pressure of one's fingers—no tools are required and when necessary it may be readily removed for the purpose of painting or papering, without disturbing the position of the switch.

Another point of advantage which will appeal to many people is the fact that this plate of Bakelite, as it has no metal holding screws, is a perfect non-conductor of electricity. It may be wiped off with a damp cloth without the slightest danger of a shock.

Brass plates of this type can also be furnished in any finish or design that may be desired.



With the completion of the building shown above, the Appleton Electric Company, Chicago, will add 100,000 square feet to its manufacturing facilities. The addition adjoins the present plant



# X-Ray

TRADE MARK REG.

# Reflectors

## For Every Window-Lighting Need!

Shallow windows, deep windows—high windows, low windows—each may be correctly illuminated with scientifically designed X-Ray Reflectors.

The "Jack" and "Jill" reflectors at \$4.50 each are two of the most popular units for medium size windows, while the "Queen" at \$6.00 is the running mate of the "King" for larger windows. Do not forget the No. 33 FLOOD-RAY for unusual effects!

*Every Good Electrical Dealer Sells These!*

**CURTIS LIGHTING, Inc.**

1119 West Jackson Boulevard

31 W. Forty-Sixth St.  
New York

CHICAGO

3113 W. Sixth Street  
Los Angeles



### Conduit Seals

The Misener & Irving Manufacturing Company, Inc., Syracuse, N. Y., is marketing a "safety conduit seal," designed for sealing up the ends of conduit when it is necessary to leave the job temporarily. The seals are made of heavy fibrous stock thoroughly paraffine waxed, which renders them waterproof.



The illustration shows the seal slipped into place and the bushing screwed onto the conduit, rendering the exposed conduit ends air, dirt and cement proof. The seals are easily destroyed with a screw driver or knife when the work of fishing the wires begins.

### Double Control Panels

A new General Electric line of double control panels is designed to govern motors driving house, sprinkler, sump and circulating pumps in hotels, office buildings, large apartment houses, etc. Such pumping equipments are frequently arranged in pairs for protection against breakdown and to provide increased capacity in case of emergency.

Each panel consists of a composition base supported on angle-iron frames for floor mounting. When the panel is used to control one motor it usually contains one fused line switch, two starters, one test switch for each magnetic starter and one transfer switch. For the control of two motors another line switch is added. Undervoltage release protection is furnished for each starter. When controlling one motor the transfer switch allows the transfer of the motor from one starter to the other. When controlling two motors either motor may be transferred to either starter.

### Lighting Units

A new window floodlight unit, the "Solux Windo-Flood," that has recently been placed on the market by the Westinghouse Electric and Manufacturing Company, is said to enable the focusing of direct attention on certain articles displayed in show windows or store interiors. This object is accomplished either by means of intensified light, or colored light projected toward the display.

The reflector of this unit is of chromium-plated copper and a sheet-steel swivel base permits universal adjustment of this unit, with the result that the "Windo-Flood" can be suspended from the ceiling or wall and the beam trained in any desired direction.

A film holder may be provided with the unit to hold the gelatin color film in position.

Another new Westinghouse lighting unit is the "Sollaire."

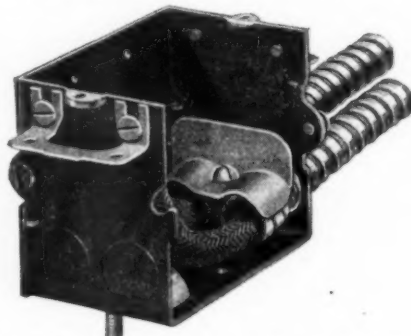
With this unit it is possible to utilize a high percentage of the light generated by the lamp due to the fact that the contour of the lamp is free from all curves that might tend to trap the light. When properly lighted the light center is positioned so that all downward rays are transmitted through the globe with only a slight loss in efficiency due to the absorption by the glass. In addition, the upward rays are to a large extent redirected downward.

### Fan Hanger

A new fan hanger for application to standard outlet boxes has been perfected by the Frank Adam Electric Company, St. Louis. The hanger is furnished without box or cover but with a substantial fastening part for attaching to any make of standard rectangular opening box cover for a 4x4x1 1/2-in. standard outlet box. Also furnished are a brushed brass finish beveled edge plate, 2 3/4 x 4 1/2-in., and a universal receptacle. The fan supporting part is fitted with the same size of steel bolt as the other fan hangers of the company's line and has a brass washer.

### Switch Box Adjustable Clamp

An adjustable clamp has been added to the features of the "Gem XC" sectional switch boxes, manufactured by the Chicago Fuse Manufacturing Company. This has the effect not only of securing the sheathed and metallic cable or loom, but at the same time closing up any knockout hole space not filled up by the incoming cable or loom. The new



clamp has an extension so that as the screw is turned down this extension covers the openings, if any, depending upon the size of the cable used. The "Gem" sectional boxes equipped with this are the "XC," the "Lock-tite XCT" and the bracket box "XCB." The illustration shows the "XC" box.

### "Durex" Lighting Equipment

The Wheeler Reflector Company has announced additions to its "Durex" line of industrial lighting equipment. The "Durex" line of reflector canopy has now been increased to include five types of canopy construction and three types of reflector.

The reflectors now available in the "Durex" construction (embodying the Wheeler screw ring construction and a short canopy for easy wiring) are the R. L. M. standard type, the shallow dome type, and the parabolic type. The five canopies are the stamped standard, the cast standard, the stamped outlet box, the cast outlet box, and the pendant.

### Manufacturing Notes

The Requa Electrical Supply Company, Inc., Rochester, N. Y., has recently issued a new catalogue of 600 pages, containing a complete list of standard materials and much engineering data valuable to the contractor.

New agents have been appointed by the Roller-Smith Company, New York City, as follows: Robinson Sales Company, Polson Building, Seattle, Wash., for the States of Washington and Oregon; Ashida Engineering Company, Ltd., Daini, Osaka, Japan, for Japan, Korea and Manchuria.

The Square D Company, Detroit, has issued its Catalogue No. 32, listing and illustrating its line of safety switches and power panels.

The Birmingham office of the American Steel & Wire Company, which hitherto handled only a few of the products of the company, will now become a unit of the general sales office in Chicago and its scope will be enlarged to cover all the products manufactured by the company. J. J. Gilmore, in charge of the office, has been promoted to be manager of sales for that district and the sales staff has been largely increased.

A booklet has been issued for free distribution by William Brand & Company, 27 East 22nd Street, New York, which describes the nature, qualities and uses of mica and mica products.

The Trumbull-Vanderpoel Electric Manufacturing Company, Bantam, Conn., has issued a new bulletin on its "77" safety switch. The switch is designed for application where fractional h. p. motors are used.

An illustration of the value of special window advertising is shown in the accompanying photograph of a model "Gray-bar" dealer window display. It pictures good wiring and the pleasure, convenience, efficiency and comfort that may be obtained from it. The devices shown in the window are products of the Bryant Electric Company, Bridgeport, Conn.

